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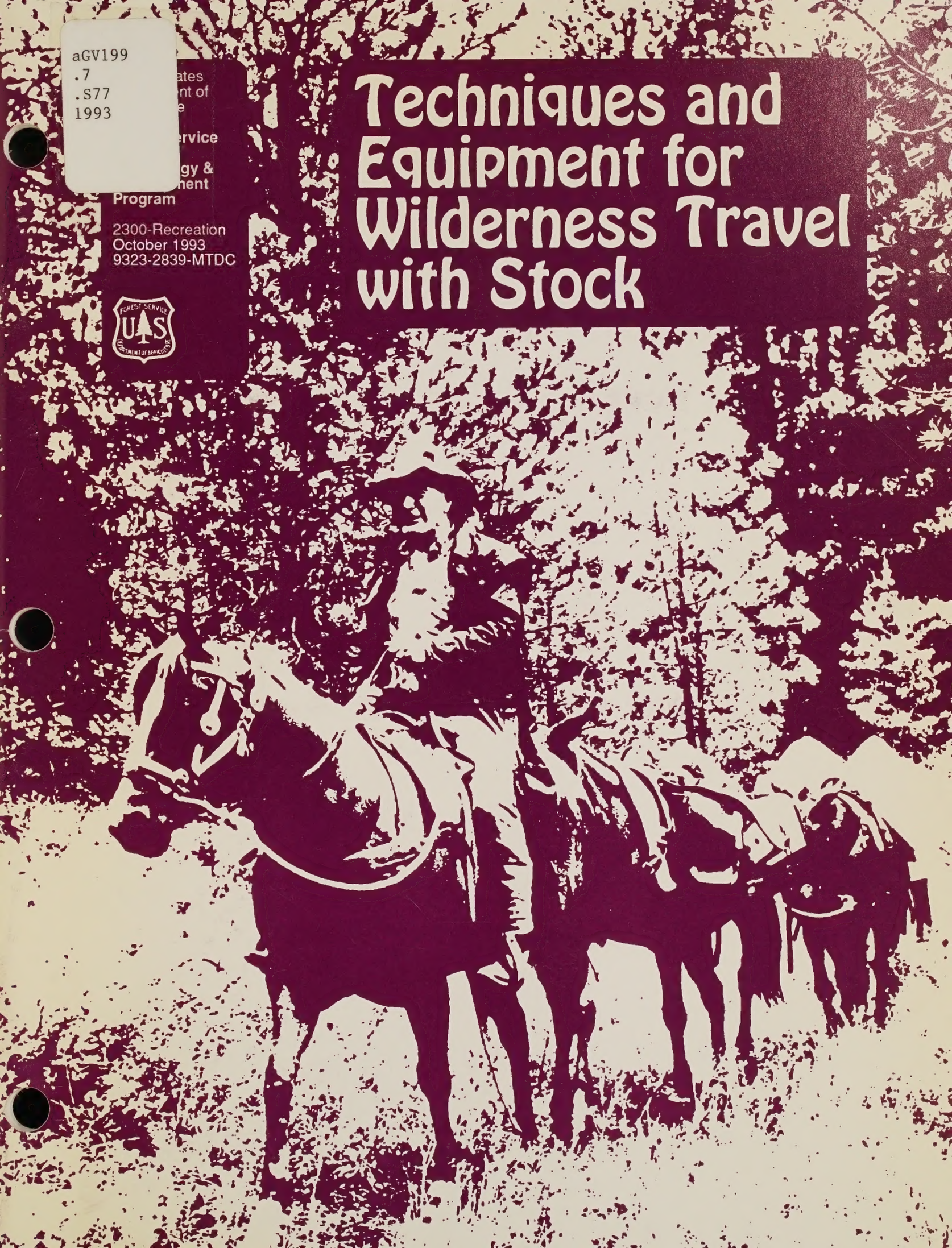

Techniques and Equipment for Wilderness Travel with Stock

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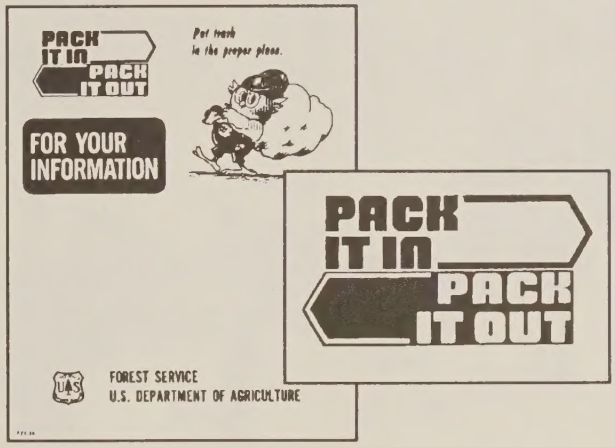
Introduction

America's wilderness trails are busier than ever before. When wilderness use becomes concentrated, soil, vegetation, and water have little chance to recover from the impacts of people and stock. Often, the result is bare ground, trampled roots, and polluted waters.

Concentrated traffic can affect soil, vegetation, and water.

Wilderness travelers can help maintain and restore the beauty and solitude of wilderness by keeping groups small, traveling less-used trails, avoiding wet areas, following appropriate camp etiquette, using lightweight and compact equipment, and adopting "Leave No Trace" and "Pack-It-In—Pack-It-Out" philosophies.



Signs alert users to be sensitive to environmental needs.

For years backpackers have taken advantage of lightweight equipment to practice low-impact camping. New materials have made the same advantages available to those who travel with stock.

This publication consolidates information on techniques, equipment, specifications and commercial sources. It is intended for those who use horses, mules and llamas in wilderness. This guide complements a 13-minute color video, "Techniques and Equipment for Wilderness Horse Travel", originally produced on film by the Missoula Technology and Development Center (MTDC). While some of the information in this video may be dated, copies are available on loan without charge from MTDC. Although directed at wilderness stock users, the techniques and equipment also apply to non-wilderness recreationists.

Techniques for Wilderness Travel With Stock

Preparation

A trip begins long before arriving at the trailhead. It starts with planning and preparing the stock, the equipment, and the stock user. Develop a check list of equipment and review it before heading out on a trip with stock (See Appendix A). Gathering information about the route and terrain helps the recreationist prepare stock for altitude changes and long distances. Knowing trail weather, mileage, and trail conditions will help determine food, clothing, equipment, feed, and fuel needs.

Reviewing a check list with stock and camping gear.

Stock user in winter.

Stock should be in good physical condition, wormed for intestinal parasites, have current vaccinations, and be properly shod. Animals should be familiar with packs and with walking on trails.

Prepare a stock first-aid kit with items such as fura ointment, elastic wrap, vetwrap or vet tape, gauze, suture thread and needles, and disinfectant, so punctures, cuts, and scratches can be cleaned and bandaged.

Contacting local land managers for details on regulations and opportunities is essential. Managers of designated wildernesses provide specific information and rules

Stock traveling with packs.

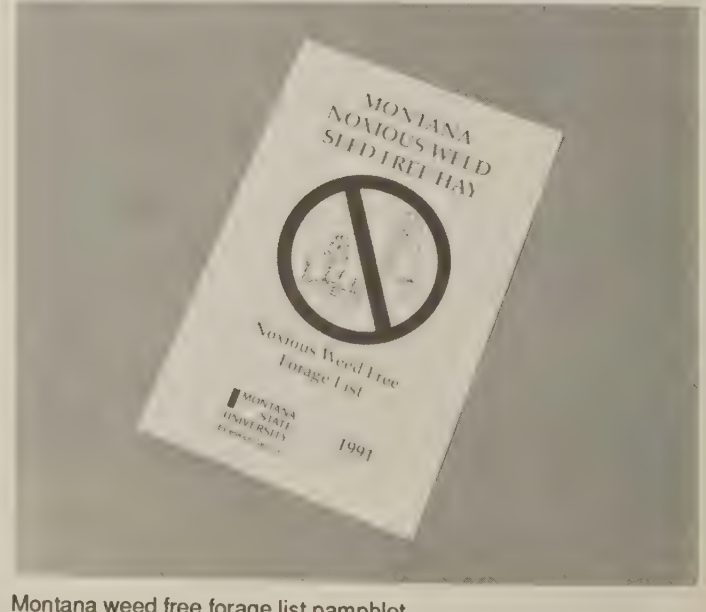
concerning permits, campfires, party size, grazing, weed-seed-free feed, trail closures, and more. Information and rules may vary from area to area.

By asking local land managers about grazing opportunities and restrictions, stock users can determine how much supplemental feed is needed, where to camp, and the recommended method of stock containment. Animals that are introduced to new methods of containment may be nervous and can damage equipment or injure themselves. Knowing feed and containment information ahead of time allows stock users to introduce their animals to the appropriate hobbles, pickets, highlines, electric fences, various temporary corrals, and supplemental feed before the trip begins.

Familiarize animals with pickets.

Although regulations may not require it, stock should be fed weed-seed-free feed to prevent the spread of noxious weeds. All animals should be on weed-seed-free diets before heading into the wilderness. Hay bales and processed feed products should be certified as weed-seed-free. Removing weeds and burrs from animals, tack, trailers, and trucks can also help reduce the spread of noxious weeds. Some state extension services and county weed control offices provide sources for weed-seed-free forage. The lists also indicate forage type, package style, and approximate tonnage for sale.

Bag of weed-seed-free feed.



Montana weed free forage list pamphlet.

Packing

Once all the gear is assembled, it's time to pack up. Mantie tarps and panniers are the most commonly used for packing camp gear because they can serve a number of purposes. Manties are useful as ground cloths, emergency animal blankets, and covers for equipment and stock tack.

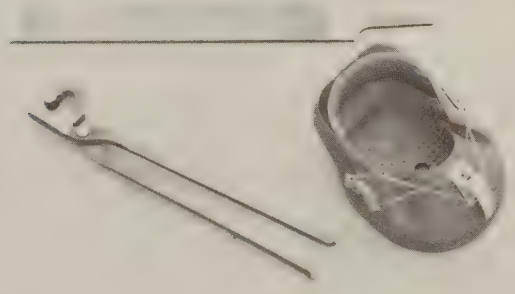
Shaking out a mantie tarp.

Panniers can provide easy access to gear on the trail and are handy for storage at camp. They are available in a variety of lightweight materials including nylon, canvas, hard plastic, and aluminum. Panniers that fit over a riding saddle are convenient for those who prefer walking to camp but want a saddle for side trips. Be sure the saddle pannier fits the animal properly so the weight of the load is not pressing on the animal's ribs.

Left to right: hard plastic, aluminum and canvas panniers.

A pannier at camp.

Instead of packing farrier tools and extra iron shoes, a lightweight urethane temporary shoe, such as Easyboot, can be packed as a spare horseshoe or as protection for an injured hoof. Include a tool for tightening or pulling loose shoes and a rasp for shaping hooves. Some people who have used the temporary shoe suggest cutting the boot along the back to fit the animal's hoof, and drilling three to four holes in the bottom of the boot to drain water. One disadvantage of the temporary shoe is that mud can pull the boot off the animal's hoof.



A temporary shoe, rasp, and tool for shaping hooves.

A temporary shoe being cut to fit a mule's hoof.

Holes drilled in bottom of a temporary shoe.

Supplemental feeds, such as pellets and processed grain products, help reduce the amount of grazing needed and may allow a greater choice of camping spots. However, some stock users feel these products do not provide the animal with adequate bulk and should be fed only as a supplement to hay or grazing.

Mule eating out of a nose bag.

Trail Travel

Animals correctly shod and properly packed tend to stand more quietly and cause less wear and tear when traveling on the trail.

Pack animals need to be checked regularly to assure that the packs are balanced and fit comfortably and that there are no loose ropes. Loads ride better, stock travel more comfortably and the chance of injury to stock is less when loads are well balanced.

Once on the trail, try to keep all stock in a single file to avoid creating multiple parallel trails. Open ridges and mountain meadows are especially vulnerable to multiple parallel trail formation. For safety reasons, stock should not be turned loose to roam freely on the trail.

Although it is often difficult to do, stock should be kept from skirting shallow puddles and minor obstacles. This will help prevent the formation of wide, deteriorated trails.

Shoeing a horse.

Checking horse and mule packs.

Rider leading a packstring in a single file on a wilderness trail.

Parallel trails.

A wide deteriorated trail.

Stay on the trail when negotiating switchbacks. Short cutting switchbacks removes plant cover and creates vertical paths that erode severely. Short cutting switchbacks is also harder on stock.

Many trail users are unfamiliar with stock. If stock users politely inform other trail users of their concerns, user conflicts may be reduced. Hikers should yield to stock traffic, but not all of them know this. When encountering hikers who are unfamiliar with stock, ask them to stand on the downhill side of the trail and wait quietly for the stock to pass. If stock spooks, standing downhill will encourage them to go uphill and lessen the chance of an accident.

Although bicycles are not allowed in designated wilderness, often trails leading to the wilderness boundary are open to bicycles. Bicyclists also should yield the right of way, although many of them don't know this. When bicyclists approach from ahead of the stock user, the stock user can ask the bicyclist to stand on the downhill side of the trail, talk

Keep the packstring on the trail as it negotiates a steep switchback.

Hikers waiting downhill while packstring passes.

quietly to the stock so the animals can tell they are a human, and wait until the last animal has passed well beyond them before continuing on. However, it is difficult for a bicyclist to warn stock users as they approach from the rear.

Llamas and their handlers should also yield the trail to horse and mule traffic by standing on the downhill side of the trail.

A packstring passing a mountain bicyclist.

It is a good idea to let animals relax for a few minutes before leading them to drink in a stream. This gives them a chance to relieve themselves away from fresh water sources.

Horses drinking at a stream.

At rest stops, even short ones, stock should be tied well off the trail with tree-saver straps. This practice is not only courteous to other trail users, but it also helps minimize trail wear and site erosion. For the same reasons, stock should be kept back from scenic overlooks, historic sites, and other popular stopping points.

Tie horses properly even for short periods.

Most wildernesses have specific rules about methods for tying stock, even for short periods of time. The tree-saver strap is a good method of restraining stock and is one of the better tools to prevent resource damage. Stock can be quickly tied, kept in order, and easily watched by setting up a highline with tree-saver straps. Some people use discarded cinches or automobile seat belts.

Manure should always be scattered after animals have been tied. In some heavily used locations, stock users pack manure out in plastic bags.

A horse tied to a tree with a tree-saver strap.

Setting up a highline with tree saver-straps.

Travel in Bear Country

When traveling in bear country, take extra care to reduce the chance of an encounter. Make human and stock food, as well as garbage, unavailable by using bear-resistant containers or by hanging food in a tree. All garbage should be packed out. Burying garbage is not acceptable because bears usually dig it up.

Contact land managers when planning a trip in grizzly bear country. Special rules concerning human and stock food storage and camping precautions may apply in wildernesses with grizzlies. These rules are implemented to minimize encounters between grizzly bears and humans and provide for user safety. Managers also can provide detailed information about traveling and camping more safely in these wildernesses.

While in grizzly bear country it is best to travel in pairs or groups and to make noise to alert bears to human presence. Always keep a clean camp and follow agency regulations on food storage. Remember, all food and beverage items (including canned food), garbage, processed livestock and pet food, scented toiletries, and freshly caught fish attract bears. Stock users should avoid using molasses-treated oats. Nose bags are recommended for feeding stock to minimize grain and pellet spillage. Hay is not considered a bear attractant.

Additional information on travel and camping in bear country can be obtained at USDA Forest Service and State Wildlife Department offices. To obtain a copy of "Living with Grizzly Bears-Structures That Work," contact the USDA Forest Service Northern Region, Wildlife/Fisheries Unit, P.O. Box 7669, Missoula, Montana 59807.

Precautions must be taken in bear country.

Camping

At the end of a day on the trail, travelers look for a comfortable camp spot. As a general rule, camps should be hidden from main trails and away from water so that everyone can enjoy campsite privacy and solitude. Because standards for camping distances from trails, water sources, and meadows may not be the same in every wilderness, stock users should find out before their trip what regulations apply. In most cases, camping at least 200 feet (60.96 meters) from trails, water sources, and meadows is recommended or required.

Most wilderness managers encourage using existing sites. This confines the major impact to sites that already have been affected by use. In some locations with little use, wilderness managers ask campers to select sites with little or no previous use so an individual site does not become overused. Campers should use the low-impact practices discussed. All wilderness users should be careful not to cause resource damage in fragile high alpine meadows. Rather than camp in these fragile areas, it is better to camp at lower elevations and take day rides to visit these locations.

It is important to tie stock away from the immediate camp area. Any pawing and trampling that occurs may create an overused appearance and dusty conditions in camp. Most visitors do not like stock manure in campsites.

Stock tied to a highline away from the immediate camp.

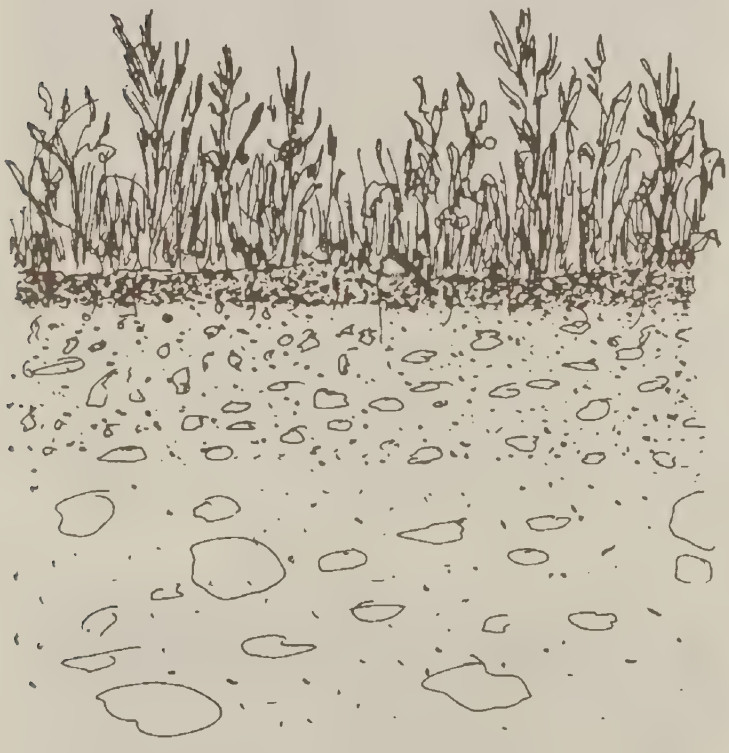
When stock do not stand quietly, hobble them while they are tied so they do not damage tree roots. Where stock are allowed to be tied to trees, avoid leaving them there for more than an hour or two. Be sure to use a tree-saver strap even for short stops.

A horse with hobbles tied to a tree saver-strap.

During the camp stay, stock users should make every effort to minimize or reduce their impact and prevent contamination of water sources with stock or human waste. For washing chores, campers should use a basin at least 200 feet (60.96 meters) from water sources. Even soaps marketed as biodegradable should not be used in water sources.

Use a basin away from water sources.

Dispose of all waste water at least 200 feet (60.96 meters) from water sources. Human waste and toilet paper should be buried in the top 6 to 8 inches (15 to 20 centimeters) of soil at least 200 feet (60.96 meters) from water sources, and well away from campsites or places where people are likely to walk.



Bury waste in top 6 to 8 inches (15 to 20 centimeters) of soil.

A stove is better than a campfire for cooking. A stove cooks faster, is more efficient and easy to use, is not as sensitive to inclement weather, and causes fewer resource impacts.

A campfire can sterilize the soil and leave long-lasting scars on the land. Rocks used in campfire rings intensify heat damage and are not necessary to build an efficient fire. A fire built in a fire pan can provide the same social atmosphere with less resource damage than a fire built on the ground. A fire pan works well when cooking for three or fewer people. Also, consider enjoying a fireless evening.

If a campfire is built on the ground, use a location where a campfire previously was built. Try to keep the campfire small and use only dead and down wood. Be sure the fire is dead out. If regulations don't require ashes to be packed out, scatter them before leaving.

Using a stove to cook food.

Grazing and Stock Containment

Although regulations vary in specific wildernesses, the following grazing and stock containment guidelines generally apply to wilderness situations. For specific information contact the land managers of the wilderness to be visited.

To be sure that an area is not overgrazed, leave 3 inches (7.62 centimeters) of grass in a rough, tufted appearance. Do not allow animals to graze in areas where the grass looks short and smooth. Avoid wet, marshy areas and lake edges, because they are very susceptible to damage. To prevent water pollution and bank erosion, tie stock well away from water sources. Use a collapsible bucket to water stock or lead them to water at a rocky spot where little bank damage will occur.

Stock grazing in wilderness.

An overgrazed site.

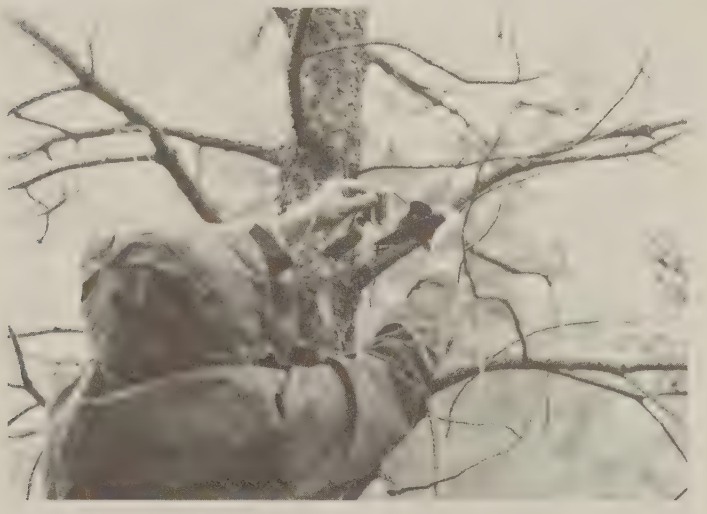
Horse drinking at a rocky bank.

If picket stakes are used, they should be moved frequently to prevent overgrazing.

Moving a horse on a picket.

A highline is an effective, low-impact method for containing stock. Two-inch (5.08 centimeter) wide, nylon tree-saver straps with adjustable buckles allow stock users to set up a highline quickly and easily with little or no damage to the tree. A rope is run between the straps, tied with a quick-release knot, and pulled taut. The rope should be placed approximately 7 feet (2.14 meters) above the ground. Set up the highline where the soil is hard and rocky. Don't tie stock directly to trees. Many managers have adopted strict regulations concerning picketing stock, grazing stock, and using corrals.

A highline tied to tree-saver straps.



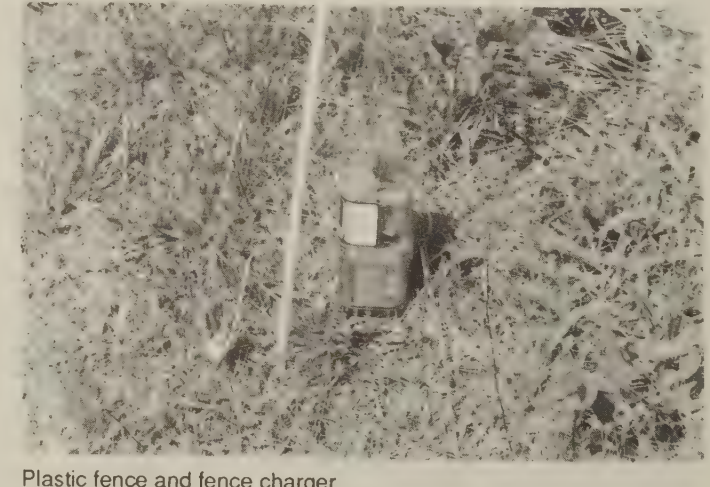
Attaching tree-saver straps to tree.

A highline tied to a tree-saver strap.

Once stock are trained to respect an electric fence, it can be the most convenient temporary corral. Several new electric fence systems are lightweight and easy to assemble or move. For example, one system uses lightweight plastic posts, an aluminized plastic ribbon called Glo-Gard, and a 3-1/2-pound (1.58 kilogram) solid-state fence charger that uses six flashlight batteries as an energy source. It requires no native materials and makes a secure enclosure. The Glo-Gard and plastic posts needed to enclose 1/2 acre (.203 hectare) of pasture weigh only 18 pounds (8.16 kilograms).

Stock grazing within an electric fence corral.

A close-up of Glo-Gard.



Plastic fence and fence charger.

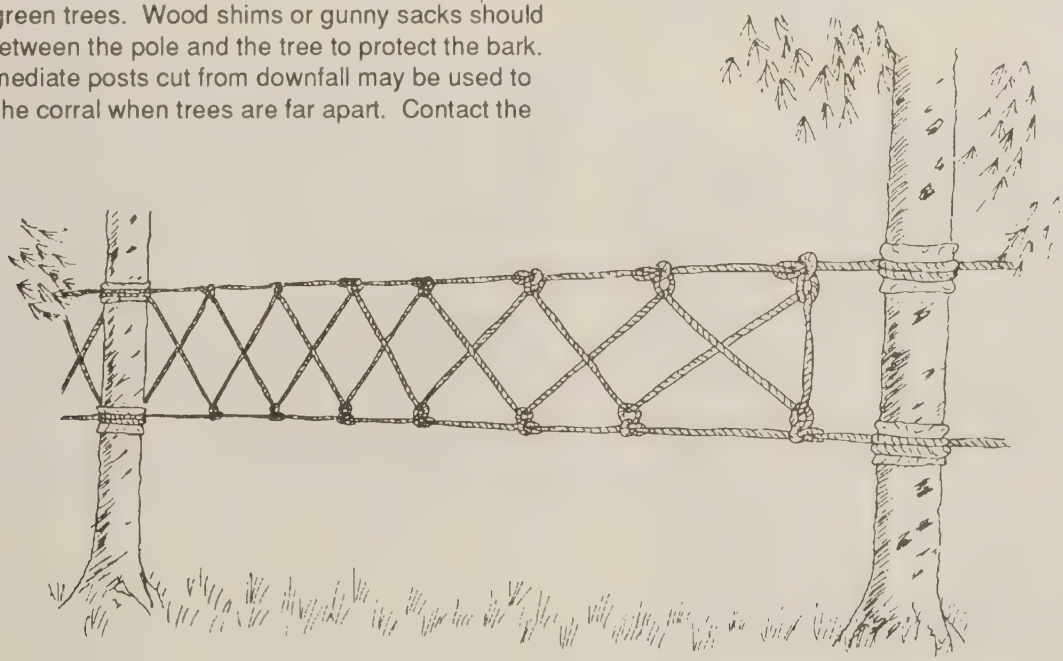
Plastic snow fence can be used to contain stock. It is light weight, easy to pack, and is available in a variety of colors, including green and black. Some people use a strand of electric fence at the top of the snow fence to make sure that stock do not escape from the enclosure.

Horses in snow fence enclosure.

Pole corrals are prohibited in many wildernesses because they concentrate use into a small area, which results in trampled vegetation and compacted soil. Where pole corrals are allowed, cutting green trees to make poles is prohibited. When pole-size downfall is abundant and pole corrals are authorized, poles secured to trees should be tied with rope rather than secured with wire or nails. Nails should never be driven into green trees. Wood shims or gunny sacks should be placed between the pole and the tree to protect the bark. Some intermediate posts cut from downfall may be used to strengthen the corral when trees are far apart. Contact the local land manager to find out how long a pole corral can be left in place before it must be moved. Pole corrals should be dismantled after use.

A pole corral secured with rope, wood shims, and gunny sacks.

Rope corrals are easier to erect and remove than pole corrals and they do not require poles where standing trees are available. But, rope corrals may not be as secure as pole corrals and a lot of rope must be packed in. One method uses two parallel ropes tied with frequent loops or bowlines so cross ropes can be threaded through to make a more secure enclosure. Feed sacks or wood shims should be used to protect the tree from the rope.



Rope corral.

Flies and mosquitoes can aggravate stock that are tied. Bug repellent and fly nets or face screens such as fringed eye guards ease their torment so stock stand quietly.

Horse with fringed eye guard.

Spraying repellent on a horse.

A lightweight collapsible bucket works well for watering stock, drowning campfires, and hauling wash water. Using a bucket to water stock instead of taking animals to the stream or lake prevents the bank from being trampled.

Horse drinking from a collapsible bucket.

If possible, pack in supplemental feed to reduce the impact of grazing. Supplemental feed in cubes and pellets should be fed in nose bags. Feed placed on the ground will attract animals that may dig up the site. A manger made from geotextile material also helps keep feed off the ground. A pellet ration may not supply the bulk that makes an animal feel full. Animals may become restless, chew ropes, and strip bark from trees. A few hours of grazing or feeding smaller rations more often helps stop such behavior.

Horse eating from a nose bag.

A geotextile manger.

Most pellets contain enough salt to satisfy stock for a few days. If additional salt is packed in for long trips, only salt blocks should be used. Small 4-pound (1.81 kilogram) salt blocks are available to reduce pack weight and bulk. Salt blocks should be placed in a container to prevent rain from leaching salt into the soil, destroying vegetation and attracting wildlife that paw up the ground.

Horse licking a salt block.

Breaking Camp

When it's time to break camp, nothing should be left behind. All refuse must be taken out. Burned cans and other unburned debris from the campfire should be crushed for easy packing. Pack out all garbage, including food scraps, grease and paper. Burying garbage or burning aluminum foil is not an acceptable disposal method and is illegal in some locations.

Dismantle temporary hitch rails and corrals. Scatter manure piles to aid decomposition, discourage flies, and maintain an undisturbed appearance. If stock pawing or trampling has created holes or depressions, replace the soil and cover it with natural litter such as pine needles or leaves. Any large objects that were cleared from the area or moved into camp should be returned to their original location. Ropes should be removed from trees and packed out.

Replace soil and cover holes with natural litter.

Putting branches back on site.

If a campfire was used, make sure that it is drowned dead out and that unused firewood and rocks from fire rings are scattered. Ashes should be disposed of according to local regulations. Some managers require that ashes be scattered. Others require that they be packed out, particularly along some rivers in wilderness used for float boating.

Llama Use

Many stock users are unfamiliar with llamas. This section provides information for those who use other types of stock, as well as llama users.

Llama on the trail.

As with all stock, the key to a successful trip with llamas is working with healthy, well-conditioned, well-trained animals. Llamas, like people, perform best on the trail when they are in good condition. Before a wilderness trip, llama packers should start a preconditioning program for themselves and their llamas. Llamas should be wormed for internal parasites, have current vaccinations, and have properly trimmed toenails before embarking on a trip.

Trim toenails.

Like horses and mules, llamas should be familiar with being saddled and carrying loads before their first trip into the wilderness. Llamas that are properly packed and are in good physical condition stand more quietly and cause less wear and tear on the trail. It is important that they are familiar with picket lines and are able to negotiate simple obstacles like streams and fallen logs.

A llama on a picket line.

Llama users need some equipment specific to llamas. The first is a swivel picket stake and at least a 20-foot (6.096 meter) rope for staking llamas in camp. Because llamas require closely balanced loads, hand scales are needed. It is also important to have a first aid kit that includes medications and equipment for treating minor llama injuries and ailments.

A llama picket stake.

Like other stock users, llama users should make sure all pack equipment is in good repair. If a frame pack saddle is used, it should adequately clear the animal's spine. If a soft pack is used, no heavy items should be placed directly over the animal's spine.

Llama pack equipment.

Pack llamas so packs clear the spine.

A llama wearing a soft pack.

Whatever type of pack saddle is used, each pack should be checked to make sure that no part of the saddle digs into the llama's back or causes rubbing or soreness.

Llama users should use lightweight gear and limit pack weights. A good guideline for pack load weights is 25 to 30 percent of the llama's weight.

Like other stock, llamas may need processed supplemental feed. About 1 pound (.45 kilogram) of feed per day for each llama is usually sufficient when good grazing opportunities are available. More feed should be packed when grazing is scarce.

Horses and mules may become nervous or excited when they encounter a llama. Horses react to the smell of the llama more than to the sight of it and they may be reluctant to pass llamas due to the odor. Many stock users put horses, mules, and llamas together for a few days to get them used to each other.

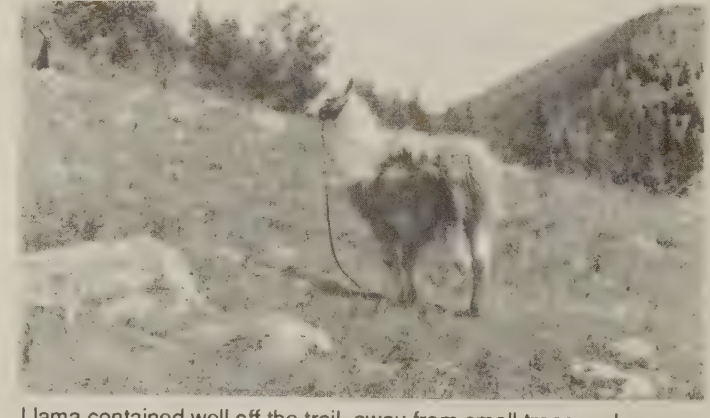
Because they are more maneuverable, llamas should yield the right-of-way to horses and mules. Llama users and their animals should step off the trail several yards downhill, if possible, to allow the horses and mules room to pass easily. When traveling on switchbacks and steep trails with limited visibility, llama users should travel slowly and be cautious of approaching horses or mules.

Llamas approaching horses on the trail.

Llamas should be allowed ample opportunities to rest along the trail. They should be moved well off the trail during rest stops so they aren't right on the trail when horse or mule groups come by.

Standing in water will often cause an animal to relieve itself, so it is best to move llamas rapidly through any stream crossing. When possible, llamas should be picketed or contained well off the trail but within sight of camp. Be sure to keep them away from small trees and any potentially poisonous plants. As a safety measure, many people attach the picket line to a stake or "highline" with a piece of rubber or bungie cord. This acts as a shock absorber in case the llama spooks or runs abruptly to the end of its rope.

Llamas and hikers taking a break on the trail.



Llama contained well off the trail, away from small trees and poisonous plants, and within sight of camp.

Equipment for Wilderness Travel With Stock

Equipment and Supplies

Lightweight gear requires fewer animals, so less supplemental feed is needed. Reduced pack weights and fewer stock reduce the impacts on wilderness trails and resources. Some of the available items that can reduce weight have been highlighted below.

One pack horse carries gear for two riders.

Tents

A variety of dome, A-frame, and pyramid tents are lightweight alternatives to traditional wall tents. These tents come in various shapes, sizes, weights, and colors. The majority have room for two to four people and weigh less than 10 pounds (4.54 kilograms). These are easy to assemble and are made with lightweight, durable, easily compacted nylon fabric. Many tents are now available in subdued, natural colors that help conceal the camp, giving more privacy and reducing the visual impact on others. For those who prefer a wall tent, lightweight, treated canvas materials that resist rain, mold, and mildew are available in treated-canvas brands such as Sunforger, Vivitex, and Campercloth. Sunforger and Vivitex are reported to breathe better than Campercloth and experience little or no ultra-violet breakdown.

A variety of lightweight tents.

Lightweight tent.

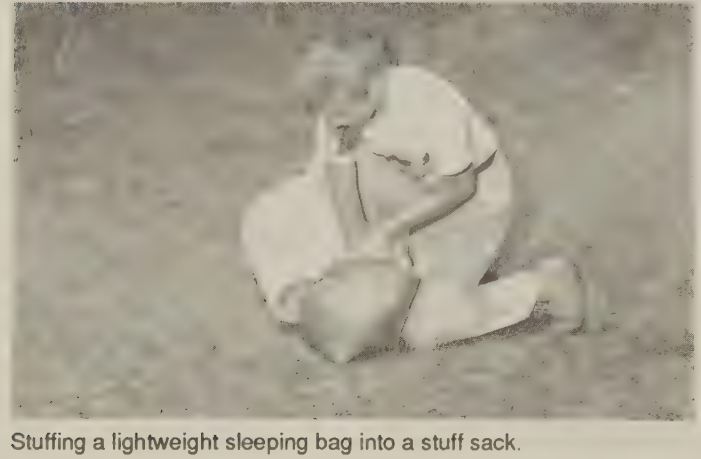
Tent Supports

Light aluminum ridgepoles and uprights are available for wall tents. The tents can be assembled, dismantled, and moved more easily with the aluminum supports than with wood pole supports. Aluminum supports also produce less impact than cutting downfall for wood pole supports.

Aluminum uprights and ridgepoles in wall tent.

Sleeping Bags

Compact polyester or down-filled sleeping bags and foam sleeping pads or air mattresses are lighter and easier to pack than cots and sleeping bags with conventional insulation.



Stuffing a lightweight sleeping bag into a stuff sack.

Stoves

Camp stoves ease the cooking chore and eliminate the need for cooking fires.

Camp stoves for large groups (Left) and for small groups (Right).

Makers of wood-burning stoves for tents have developed lighter, less bulky models. These stoves now range in weights from 8 to 51 pounds (3.62 kilograms to 23.13 kilograms). They are lighter, more convenient to pack, and easier to assemble than traditional stoves. In addition, some manufacturers offer catalytic stoves that are suitable for use in tents.

A lightweight, collapsible stove for a tent.

Stove collapsed for packing.

Many stock users prefer lightweight "backpacker" stoves. These smaller stoves come in a greater variety of sizes and range in weight from a few ounces to 10 pounds (a few grams to 4.53 kilograms).

A typical backpacker stove.

Fuel choices for stoves include pressurized gas canisters (propane, butane, and blended fuel), liquid fuels (gasoline, kerosene, and alcohol), and solid fuels (wood or wood pellets). The amount of burning time per fuel tank ranges from 10 minutes to over 4 hours. Solar models are also being developed.

Propane, butane, gasoline and propane for camp stoves (left to right).

Cookware

Cookware used in camps is often the same as that used in the home. However, lightweight nesting cookware and utensils reduce bulk and weight.

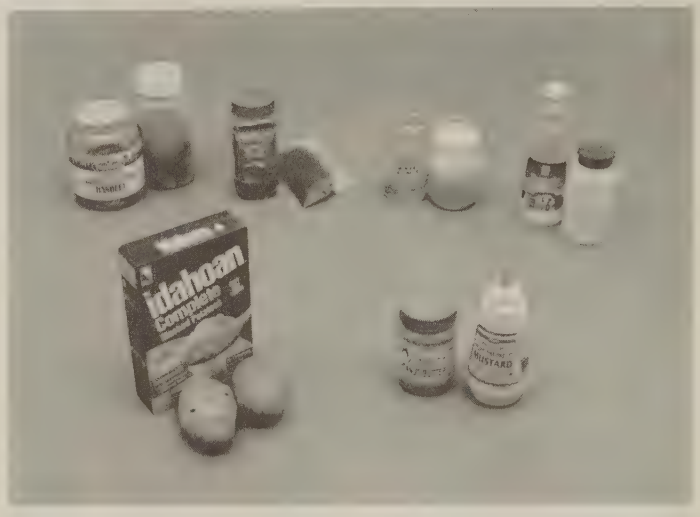
A lightweight nesting cook-set.

Food

Dehydrated and freeze-dried foods are light and take up less space than canned goods. The choices of foods range from main dishes to fruits to ice cream. In addition, many prepackaged meals and side dishes are now available in supermarkets. These include dishes such as potato au gratin, Spanish rice, fettucini noodle, beef stew, and instant oatmeal. The dehydrated, freeze-dried, and prepackaged foods are easy to prepare and can reduce the amount of garbage produced in camp. Plastic and aluminum materials included in the packaging should be packed out.

A variety of prepackaged meals.

Food weight and bulk can also be reduced by putting the contents of glass jars and bottles into lightweight, reusable plastic containers. Repackaging food items, such as coffee and dried potatoes, in double plastic bags is another way to reduce weight. Heat sealers for plastic bags work well. When repackaging, be sure to refrigerate foods when necessary to reduce spoilage.



Placing food in plastic bags and bottles condenses packing space.

Stock Containment Equipment

Stock can be secured in a number of ways while they are grazing. They should not be tied to trees, because damage to the root system can cause the tree to die. Hobbles are effective for some animals, but others are able to move rapidly wearing hobbles.

Hobbles.

Picket ropes and pins are another common containment method. An easily moved picket pin is desirable. Metal picket pins are easier to remove than wooden pins. Be sure to walk the animal to the end of the picket rope before turning it loose. If the animal recognizes that it is restrained, it is less likely to injure itself by bolting past the end of the rope.

Fastening a leg shackle and picket rope to a horse's foot.

Some stock users contain their animals with an electric fence to allow stock to graze. Lightweight electric fences are appropriate for temporary stock containment in wilderness. Be sure stock is accustomed to the electric fence before the trip. Since wildlife sometimes go through electric fences, the fence should not be located across game trails and stock should be checked often to assure the fence is intact.

Stock contained by a lightweight electric fence.

Rope

Rope comes in a variety of weights and fabrics. There are as many preferences for rope as there are varieties to choose from. Traditionally, most stock users have used hemp rope because it is soft, easy to handle, and holds knots firmly. But, wet or frozen hemp is bulky and heavy.

Hemp rope.

Polypropylene rope is light and durable, but can be stiff, difficult to braid, and hard on the hands, especially when it is wet or frozen. The stiff nature of the material sometimes causes knots to slip.

Polypropylene rope.

Polyethylene rope such as Manillo or Unmanila, and soft-spun twisted nylon are softer and easier to manipulate than polypropylene, but are typically more expensive. Polyethylene doesn't absorb moisture and works well when it's wet or frozen. Both polypropylene and nylon rope must be burned at the ends to prevent fraying.

Soft-spun twisted nylon rope.

A burned nylon rope does not fray.

Hemp or cotton is best for picket ropes and lead ropes because polypropylene and nylon rope can damage tree bark and cause severe rope burns on an animal's hide or a person's skin. Some stock users prefer small roll chains in place of picket ropes; others attach segments of hose to picket ropes to prevent rope burns on animals' hocks.

Some people use plastic bale twine for breakaway loops on stock. The use of plastic bale twine is discouraged, however, because it does not deteriorate on the ground like hemp breakaway loops. It also is quite inexpensive, so some users don't pick it up and pack it out from camp.

A roll chain and a picket rope with hose attached.

Equipment List

See pages 39 through 42 for equipment source addresses. Costs are in 1992 dollars.

Sleeping Gear

Air Mattresses

Description

Air mattresses are made from vinyl, rubberized canvas, or nylon material in I-beam and/or box-style. The I-beam style is made in a series of tubes. The box-style has a quilted appearance similar to a bed mattress. Air mattresses are available in single, double, queen, or king sizes with or without built-in pillows.

Air mattresses generally are comfortable, but do not provide much insulation. The human body cannot radiate enough heat to warm the large volume of air in the mattress.

Vinyl air mattresses are sensitive to cold temperatures and susceptible to puncturing.

Rubberized canvas mattresses are durable and not slippery. They are relatively heavy and tend to seep air in cold weather.

Nylon mattresses are the most durable, although nylon punctures easily.

Weight

5 ounces to 14 pounds (0.4 kilogram to 6.36 kilograms) per mattress

Sources

Cabela's
Campmor
Coleman Outdoor Products, Inc.
Don Gleason's Campers Supply, Inc.
Nelson/Weather-Rite
Recreational Equipment, Inc.
Local sporting goods stores

Cost

$2 to $55 per mattress

Foam Pads

Description

Most foam pads are made with open- or closed-cell polyurethane foam padding. Usually, the outer covering is non-skid breathable cotton or polyester fabric. Some pads have a water-resistant nylon bottom. Sizes range from 15 inches by 33 inches to 30 inches by 77 inches (0.38 meter by 0.84 meter to 0.76 meter by 1.96 meters). Closed-cell pad thicknesses range from 3/8 inch to 5/8 inch (9.39 millimeters to 15.74 millimeters). Open-cell pad thicknesses range from 1 inch to 3 inches (0.03 meter to 0.08 meter).

A foam pad is lightweight, compact, and doesn't have to be inflated like an air mattress. Closed-cell foam will not absorb moisture and is efficient at retaining body heat. Open-cell foam has more capacity to absorb air, making a softer pad.

Weight

Open-cell: 24 ounces to 8 pounds (0.68 kilogram to 3.63 kilograms) per pad
Closed-cell: 9 ounces to 3 pounds (0.25 kilogram to 1.36 kilograms) per pad

Sources

Beckel Canvas Products
Cabela's
Crazy Creek Products
Don Gleason's Campers Supply, Inc.
The North Face
Northwest River Supplies
Recreational Equipment, Inc.
Sierra Designs
Slumberjack, Inc.
Therm-A-Rest
Walker's Pack Saddlery and Outdoor Supply
Local sporting goods stores

Cost

$13 to $70 per pad

Combination Air/Foam Mattresses

Description

The combination air/foam mattress is an insulated, lightweight open-cell foam core with an airtight, waterproof nylon shell that self-inflates by opening a valve. Sizes range from 20 inches by 47 inches to 26 inches by 77 inches (0.51 meter by 1.19 meters to 0.66 meter by 1.96 meters).

Combination air/foam mattresses combine the best features of foam and air mattresses. They give the comfort of an air mattress, while the foam prevents heat transfer to the cold ground, and they self-inflate by simply opening the valve.

Weight

1 pound 12 ounces to 6 pounds 5 ounces (0.79 kilogram to 2.87 kilograms) per mattress

Sources

Cabela's
Don Gleason's Campers Supply, Inc.
Jack's Plastic Welding
Northwest River Supplies
Recreational Equipment, Inc.
Therm-A-Rest
Walker's Pack Saddlery and Outdoor Supply
Local sporting goods stores

Cost

$45 to $100 per mattress

Sleeping Bags

Description

Most sleeping bags have down or synthetic fiber-fill insulation such as Quallofil, Hollofil II, Hollofil 808, or Kodel with a water-repellent nylon shell. Lengths range from 56 inches to 93 inches (1.42 meters to 2.36 meters). Comfort ratings range from 45 degrees F to -35 degrees F (8 degrees C to -37 degrees C).

Down insulation is lightweight, very durable, and gives the most warmth and compression per weight of insulation. Because down breathes, allowing body heat and moisture to pass to the outside, it has a wide comfort range. However, it is expensive, does not insulate well when wet, and dries slowly.

Synthetic insulation is odorless and non-allergenic, dries three times faster than down, and is less expensive. However, it does not compact as well as down and is heavier for equal warmth.

By eliminating extra material, a tapered bag design compacts better, weighs less, and is more heat efficient than a rectangular bag.

Weight

2 pounds 3 ounces to 6 pounds 14 ounces (0.99 kilogram to 3.12 kilograms) per bag

Sources

Buckskin Outfitters
Cabela's
Coleman Outdoor Products, Inc.
Don Gleason's Campers Supply, Inc.
Nelson/Weather-Rite
The North Face
Recreational Equipment, Inc.
Sierra Designs
Slumberjack, Inc.
Trail Rider Supply, Inc.
Walker's Pack Saddlery and Outdoor Supply
Local sporting goods stores

Cost

$60 to $285 per bag

Tents

Dome, A-Frame, and Pyramid Tents

Description

Most of these tents are made of urethane coated or non-coated ripstop nylon, nylon taffeta, or nylon oxford. Several different types of nylon fabric may be incorporated into one tent design. A-frame, dome-shaped and pyramid tents are generally available in three- and four-person sizes.

These tents are more confining than wall tents but easier to put up. Nylon fabric must be coated with a thin film of plastic to make it waterproof. Tents made entirely of coated nylon cannot breathe, trapping moisture that condenses on the walls inside the tent. Nylon tents made with an inner, breathable tent covered by an outer waterproof rain fly perform best. The new Gore-Tex tents are lighter than a two-layer tent, but are more expensive.

Because they are sturdy and lightweight, A-frame tents are popular. Dome tents and variations of the dome tent offer more interior space, but generally are more expensive.

Pyramid tents require no elaborate support structures. A center pole, pole tripod, or a rope tied between two trees are all adequate to support the tent.

Weight

2 pounds 2 ounces to 47 pounds (0.96 kilogram to 21.34 kilograms) per tent

Sources

Cabela's
Campmor
Diamond Brand USA
Eureka! Tent
Don Gleason's Campers Supply, Inc.
Moss, Inc.
The North Face
Recreational Equipment, Inc.
Sierra Designs
Trail Rider Supply, Inc.
Walker's Pack Saddlery and Outdoor Supply
Walrus, Inc.
Local sporting goods stores

Cost

$33 to $600 per tent

Geotextile Ground Cloths

Description

Geotextile (scrim) ground cloths are made of coated, high strength polyester yarn with a vinyl compound. Sizes range from 8 feet by 8 feet to 20 feet by 20 feet (2.44 meters by 2.44 meters to 6.10 meters by 6.10 meters).

Geotextile ground cloths are fire retardant, mildew-resistant, highly wear-resistant, breathable, lightweight, and easy to clean. Geotextile is an open weave fabric that can be used as a ground cloth to protect vegetation and soils in camp. The open weave allows mud, water, and debris to fall through. Geotextile is also used in the manufacture of stock equipment to reduce weight.

Weight

3/4 pound (.3 kilogram) per square yard (2.7 square meters)

Sources

Wyoming Outdoor Industries, Inc.
Surplus from paper mills

Cost

$27 to $219 per cloth

Shelter Supports

Description

Shelter supports are poles or frames designed to hold the shelter off the ground and maintain its shape.

Personal size tent poles are usually made from flexible fiberglass or aluminum and follow the curvature of the tent's design. Sizes range from 1 to 4 telescoping sections extending 3-1/2 feet to 9 feet (1.04 meters to 2.75 meters) in length.

Ridge poles are usually aluminum. They can be used as dining fly supports or replacement parts for tents. Their compact design telescopes 5 feet to 12 feet (1.53 meters to 3.66 meters).

Wall tent frames are usually made of galvanized steel tubing. Complete frame or wall tent ridge pole sections are available.

Angle fittings, pipe sleeves, and other parts come with the complete frame package or are sold separately. Frame sizes range from 8 feet by 8 feet to 16 feet by 24 feet (2.44 meters by 2.44 meters to 4.88 meters by 7.32 meters). Ridge pole sections range from 4 feet to 5 feet (1.22 meters to 1.53 meters) each.

Aluminum poles are strong, lightweight, and collapsible. They usually are standard with A-frame or dome tents, but optional on most wall tents. Self-supporting tents eliminate the need to gather tent poles at campsites, or tie ridge lines to trees. (See pages 43 through 48 for MTDC drawings)

Weight

Personal Size: 3-1/2 ounces to 2 pounds (0.084 kilogram to 0.91 kilogram) per pole

Ridge Pole: 3-1/2 pounds to 10 pounds (1.59 kilograms to 4.54 kilograms) per pole

Wall Tent Frame: 65 pounds to 100 pounds (29.51 kilograms to 45.40 kilograms) per frame

Sources

Campmor
Eureka! Tent
Don Gleason's Campers Supply, Inc.
Kwik Kamp
Thunder Mountain Tent and Canvas
Local sporting goods stores

Cost

Personal Size: $14 to $18 set of 4

Ridge Poles: $20 to $35 per pole

Wall Tent Frame: $98 to $281 per frame

Wall Tents

Description

Wall tents are made from various cotton duck fabrics in a number of weights and finishes, and may be water-, mildew-, and fire-resistant. Sizes range from 7 feet by 7 feet to 16 feet by 24 feet (2.14 meters by 2.14 meters to 4.88 meters by 7.32 meters). Custom made tents are available.

Wall tents are relatively heavy and bulky, need regular maintenance, and require lengthy set up and pack up time. A large, flat ground surface is needed. Significant impacts on soil and vegetation can result from leveling ground for a wall tent. However, wall tents are comfortable, roomy and can withstand extreme temperatures and harsh conditions.

Many items need to be considered when buying a wall tent. More wall height allows more efficient use of wall space. Fabric must be considered if the tent will be heated. Increased height adds volume for ventilation and helps prevent snow loads on the roof. Other considerations include overall quality of grommets, hem treatments such as ropes or webbing sewn into eaves, and accessories such as windows, extra doors, stove jacks, zippered closures, and wear spot reinforcement.

Weight

20 pounds to 55 pounds (9.08 kilograms to 24.97 kilograms) per tent

Sources

American Canvas Co., Inc.
Beckel Canvas Products
Big Sky Tent and Awning
Blue Star Canvas Products
Cabela's
Campmor
Colorado Tent Company
Dale Pack Station
Eureka! Tent
F. O. Berg Co.
Kwik Kamp
Last Chance Outdoor Supply
Merritt's Saddlery
Montana Canvas
Mountain River Tack
Outfitters Supply
Salem Tent and Awning Co.
Sims Stoves
Spokane Tent and Awning Company
E.H. Teasley and Company, Inc.
Thunder Mountain Tent and Canvas
Walkers
Local sporting goods stores

Cost

$80 to $776 per tent

Stock Equipment

Collapsible Buckets

Description

Collapsible buckets are made of natural flax, canvas, or vinyl nylon. One gallon to 2 gallon (3.78 liters to 7.56 liters) buckets are available.

These buckets are strong, lightweight, and collapsible. They are handy for watering stock and for carrying water in camp.

Weight

1 pound to 2 pounds (0.45 kilogram to 0.91 kilogram) per bucket

Sources

Beckel Canvas
Blue Star Canvas Products
Ray Holes Saddle Company
Keyston Brothers
Sims Stoves
Soda Creek Western Outfitters
Trail Rider Supply, Inc.
Valley Vet Supply
Walker's Pack Saddlery and Outdoor Supply
Windridge Farms
Farm and ranch supply stores
Local saddle shops
Hardware stores

Cost

$6 to $14 per bucket

Stock Fly Nets and Face Screens

Description

A fringed fly net attaches to the brow band of an animal's headstall and is secured with a throat latch. It hangs from the animal's forehead to its nose.

Fly net face screens are fully adjustable with a breakaway Velcro throat latch and/or behind the ear latch. Face screens with ear covers are available in various sizes.

Face screens and fly nets are easy to put on stock to help control flies around the animals' eyes. Stock stand quieter when not bothered by flies.

Sources

Colorado Saddlery Company
Equine Edition
Keyston Brothers
Farm and ranch supply stores

Cost

Face Screens: $6 to $11 each

Fly Net: $9 to $10 each

Manties and Sling Ropes

Description

Mantie ropes and sling ropes are made of polyester-polypropylene, soft cotton, softspun nylon, or dacron. They come in 32-foot to 35-foot (9.76 meter to 10.68 meter) lengths, or are sold by the foot. They are also sold in 100 foot rolls.

Polypropylene is light, will not absorb water or freeze like hemp rope, and comes in various colors. Generally, it wears longer than hemp or cotton rope. Nylon rope is strong, soft, flexible, and makes good pack rope, but is more expensive.

Weight

Varies with type and length of rope.

Sources

Dale Pack Station
Dave Fish Saddlery
Ray Holes Saddle Company
Keyston Brothers
Merritt's Saddlery
Morgan Horse Products
Soda Creek Western Outfitters
Walker's Pack Saddlery and Outdoor Products
Farm and ranch supply stores
Hardware stores
Saddle shops

Cost

32-foot to 35-foot (9.76 meter to 10.68 meter) ropes: $11 to $14 per rope

By the foot: $.12 to $.39 per foot (0.31 meter)

Manties

Description

Mantie tarps are usually made of heavy canvas; however, geotextile manties can be used for cargo that can withstand inclement weather. Sizes range from 6 feet by 6 feet to 7 feet by 9 feet (1.83 meters by 1.83 meters to 2.14 meters by 2.75 meters). Mantie material also is sold by the linear foot.

Manties are usually used with a Decker pack saddle. They are handy as ground cloths, to cover stock tack and equipment, and for other uses around camp.

Weight

6 pounds to 9 pounds (2.72 kilograms to 4.09 kilograms) per mantie

Sources

Big Sky Tent and Awning
Blue Star Canvas Products
Buckskin Outfitters
Dale Pack Station
Ray Holes Saddle Company
Merritt's Saddlery
Mountain River Tack, Inc.
Petty Mountain Outfitter Supply
Wilderness Trader
Wyoming Outdoor Industries, Inc.
Local canvas shops

Cost

$20 to $45 per mantie

Nose Bags (Feed Bags)

Description

Nose bags are made of canvas, nylon, nylon mesh or geotextile and are available in cylindrical or cavalry style. The cylindrical style has air holes, a single head strap, and fits over the animal's nose. The cavalry style fits under the neck and around the nose, using a neck strap and head strap.

Nose bags eliminate waste when feeding pellets or grain. The cavalry style further reduces waste because feed does not fall out when the stock throws its head. A day's ration can be folded inside this bag and carried on the trail. Nose bags made of nylon mesh allow dust to fall out of the bag and allow the animal to breathe easier. See page 49 for specifications for a cavalry style nose bag.

Weight

1/2 pound to 2 pounds (0.23 kilogram to 0.91 kilogram) per bag

Sources

Beckel Canvas Products
Big Sky Tent and Awning
Blue Star Canvas Products
Buckskin Outfitters
Colorado Saddlery Company
Crooked Pine Saddle Shop
Dale Pack Station
Decarteret
Ray Holes Saddle Company
Keyston Brothers
Montana Canvas
Morgan Horse Products
Ralide-West
Salem Tent and Awning Company
Chris Tornow
Valley Vet Supply
Whip and Spur Saddlery
The Wilderness Trader
Windridge Farms
Wyoming Outdoor Industries
Army surplus stores
Local saddle shops

Cost

$10 to $26 per bag

Panniers and Pack Boxes

Description

Panniers and pack boxes made of nylon, aluminum, plastic, fiberglass, heavy canvas, canvas and leather, or wood are available in various sizes. Panniers and pack boxes are easier to use than manties for many loads, but are not as versatile for tools or odd-sized items. Panniers and pack boxes offer convenient access to supplies and equipment while on the trail, and are handy for storing items in camp.

Weight

4 to 45 pounds (1.82 to 20.43 kilograms) per pannier

Sources

Aarons Water Packers
Back Country Super Packs
Beckel Canvas Products
Blue Star Canvas Products
Buckskin Outfitters
Cabela's
Colorado Saddlery Company
Colorado Tent Company
Crooked Pine Saddle Shop
CW Classic Welding
Dale Pack Station
Bill DeCarteret
Glenn Sports
Ray Holes Saddle Company
Keyston Brothers
Kwik Kamp
Last Chance Outdoor Supply
Montana Canvas
Morgan Horse Products
Mountain River Tack, Inc.
Outfitters Pack Station
Outfitters Supply
Petty Mountain Outfitter Supply
Ralide-West
Robertson Enterprises
Salem Tent and Awning Company
Sims Stoves
Singletree Saddle Shop
Soda Creek Western Outfitters
Thunder Mountain Tent and Canvas
Chris Tornow
Walkers Pack Saddlery and Outdoor Supply
The Wilderness Trader
Wyoming Outdoor Industries, Inc.

Cost

$115 to $400 per pannier

Temporary Horseshoes

Description

Temporary horseshoes are made of urethane, heavy gum rubber, polyvinyl, or neoprene. They fit over and around stock's hooves like a boot, and are made in a slip-on style, or with plastic or Velcro fasteners. Small, medium, or large sizes are available in horse or mule models.

Temporary horseshoes are easy to put on the horse or mule, but the hooves need to be shaped for proper fit. They provide good traction on rock and ice and holes can be drilled in the bottom to let water out. They are very useful in protecting hooves with injuries to the sole or frog, and to keep hoof treatments from being worn off or exposed to dirt. Occasionally, the shoe may be pulled off by mud. Stock adapt quickly to their use.

Weight

13 ounces (0.37 kilogram) per boot

Sources

Colorado Saddlery
Ray Holes Saddle Company
Keyston Brothers
Morgan Horse Products
Trail Rider Supply, Inc.
Local saddle shops

Cost

$5 to $25 each

Stock Restraints

Electric Fences

Description

Electric fences contain stock without the need for hobbles, picket ropes, pole corrals, or highlines. Most systems come in complete kits containing standard fiberglass posts, electric wire, steel corner posts, insulators, ground rods, tie-down stakes with cord, fence chargers, splicers, warning signs, and carry bags. Various reels and reel systems, wires, tapes, mounting posts, and fencing chargers are available separately.

Electric fencing is lightweight, easy to handle, and can be installed in a fraction of the time of conventional fencing. The fencing can be lowered, raised, added to easily and quickly, and can be taken down and set up often. A single strand of ribbon should be enough for horses or mules. Plastic posts are set about 15 feet (4.58 meters) apart. Repairs are easily made with splicers and a pair of pliers. One disadvantage is that wildlife may go through the fence.

Weight

5 pounds to 20 pounds (2.27 kilograms to 9.08 kilograms) per kit

Sources

Euer Hereford Ranch Supplies
Howell New Zealand Fencing System
Live Wire Products
Speedrite
Outfitters Pack Station
J.L. Williams Company
Windridge Farms
Farm and ranch supply stores
Hardware stores

Cost

$100 to $200 per kit

Hobbles

Description

Hobbles are made of leather, nylon, or biothane with twin loops, and may have chain, snap chain, or swivel chain connectors or be a twist type. Fleece lined hobbles are available.

Hobbles can keep stock from straying too far from camp. They also keep stock from pawing the ground when they are tied on a hitchline. However, some stock readily adjust to hobbles and can move quickly in them.

Weight

8 ounces to 2 pounds (0.23 kilogram to 0.91 kilogram) per hobble

Sources

Beckel Canvas Products
Colorado Saddlery Company
Crooked Pine Saddle Shop
Dale Pack Station

Bill DeCarteret
Equine Edition
Glenn Sports
Ray Holes Saddle Company
Merritt's Saddlery
Morgan Horse Products
Ralide-West
Salem Tent and Awning Company
Singletree Saddle Shop
Soda Creek Western Outfitters
Chris Tornow
Trail Rider Supply, Inc.
Valley Vet Supply
Walker's Pack Saddlery and Outdoor Supply
Whip and Spur Saddlery
The Wilderness Trader
Wyoming Outdoor Industries, Inc.
Farm and ranch supply stores

Cost

$11 to $70 per hobble

Picket Hobbles

Description

A picket hobble is attached to one front foot and a picket rope. It is made of leather, nylon, or biothane and comes with a swivel or heavy D-ring. Fleece-lined picket hobbles are available.

Stock confined with a picket hobble must be moved often to prevent overgrazing.

Weight

4 ounces to 1 pound (0.11 kilogram to 0.45 kilogram) per hobble

Sources

Colorado Saddlery Company
Crooked Pine Saddle Shop
Dale Pack Station
Glenn Sports
Ray Holes Saddle Company
Merritt's Saddlery
Morgan Horse Products
Salem Tent and Awning Company
Soda Creek Western Outfitters
Chris Tornow
Trail Rider Supply, Inc.
Walker's Pack Saddlery and Outdoor Supply
Whip and Spur Saddlery
The Wilderness Trader
Wyoming Outdoor Industries
Local saddle shops

Cost

$7 to $17 per hobble

Picket Pins

Description

A picket pin is usually 15 inches long (0.38 meter) and made of tapered steel or iron. A swivel type is available.

A picket pin eliminates the need to cut a wooden stake, or to picket animals to a log or tree. A lightweight auger-type steel pin helps prevent overgrazing since it is easy to move. See pages 51 and 52 for picket pin drawings.

Weight

2 pounds to 3 pounds (0.91 kilogram to 1.36 kilograms) per pin

Sources

Colorado Saddlery Company
Walkers Pack Saddlery and Outdoor Supply
The Wilderness Trader
Local farm and ranch stores

Cost

$15 per pin

Tree-Saver Straps

Description

Tree-saver straps are made from 2 inch (0.05 meter) nylon webbing, and have adjustable self-locking V-buckles. They are 6 feet to 9 feet (1.83 meters to 2.75 meters) long.

A tree-saver strap protects the tree bark from rope chafe, and the self-locking buckle allows the rope to be easily pulled tight. Two tree-saver straps can be used with rope to form an adjustable highline between two trees. A highline provides a place to tie stock so they are well away from tree roots that are easily damaged from trampling. See pages 53 and 54.

Weight

8 ounces (0.23 kilogram) per strap

Sources

Beckel Canvas Products
Central Oregon Appaloosa Assoc.
Ray Holes Saddle Company
Salem Tent and Awning Company

Cost

$25 per pair

Stoves

Liquid Fuel Stoves

Description

Stainless steel single, double, or triple burner liquid fuel stoves are available. Liquid fuels include unleaded or leaded gas, aviation gas, white gas, kerosene, or camping fuel. Multi-fuel stoves are available. Burning time is 1 to 2 hours.

These stoves are portable and compact, are available in a variety of sizes and models, and have numerous accessories. The fuel is economical, does not burn as clean as pressurized fuel, and requires care to transport. Stoves require a cool-down time before refilling the tank.

Weight

16.7 ounces to 19 pounds (0.48 kilogram to 8.63 kilograms) per stove

Sources

Coleman Outdoor Products, Inc.
Don Gleason's Campers Supply, Inc.
Recreational Equipment, Inc.

Cost

$20 to $80 per stove

Pressurized Gas Stoves

Description

Pressurized gas stoves are made of stainless steel, with or without an enamel finish. The stoves use liquid propane (LP) or butane gas, and are available in various sizes and shapes. 1- to 4-burner stoves are available with a cooking time of 1 to 6 hours.

These stoves are portable and compact. They have few working parts, burn clean, and the fuel is convenient to transport. Several appliances may be operated from one central fuel source.

Weight

2 pounds to 40 pounds (0.91 kilogram to 18.16 kilograms) per stove

Sources

Cabela's
Cambridge Welding
Century Tool and Manufacturing Company
Coleman Outdoor Products, Inc.
Don Gleason's Campers Supply, Inc.
Nelson/Weather-Rite
Partner Steel Company, Inc.
The Wilderness Trader
Wyoming Outdoor Industries, Inc.

Cost

$20 to $358 per stove

Solar Stoves

Description

Solar stoves are powered by the sun. They are made with an aluminum inner chamber, high-tech insulation, silicone rubber seals, a tempered glass door, a high-impact plastic exterior, and specular-finish aluminum fold-down reflectors. They are portable and very easy to operate.

Solar stoves use radiant and collective heat rather than fuel. The season of the year and the availability of sunshine need to be considered.

Weight

9 pounds to 30 pounds (4.09 kilograms to 13.62 kilograms) per stove

Sources

Burns-Milwaukee, Inc.
Wendy and Cindy Originals, Inc.

Cost

$159 to $199 per stove

Solid Fuel Stoves

Description

Solid fuel stoves are made of steel or black iron and burn wood, wood pellets, paper, charcoal or any similar dry fuels. Various shapes and sizes are available. Burning time varies with the size of the stove and the amount of fuel used. Many fold for easy carrying and storage.

These stoves are durable and efficient, and are often used in wall tents. The bulk and weight of most of these stoves limit their use to camps supported by stock. Some models are compact, collapsible, and easily packed. Fuel may not be available in all locations.

Weight

3 pounds to 60 pounds (1.36 kilograms to 27.24 kilograms) per stove

Sources

Beckel Canvas Products
C & S Welding
Cambridge Welding
Canyon Sheet Metal, Inc.
Colorado Saddlery Company
The Colorado Tent Co.
Kozy Kamp
Gene "Grizzly" Morgan
Nayr Industries
Outfitters Supply
Pyromid
Riley Stove Company
Robertson Enterprises
Sims Stoves
Thunder Mountain Tent and Canvas
Walker's Pack Saddlery and Outdoor Supply
The Wilderness Trader
Wyoming Outdoor Industries, Inc.

Cost

$95 to $239 per stove

Food Equipment

Cookware

Description

Cookware includes steel, enamel-glazed steel, copper bottom stainless steel, aluminum, and cast iron cookware, plus assorted utensils.

Cookware used in outdoor camps is often the same as that used in the home. However, the transportation involved in outdoor use and the need for lightweight cookware has created a market for products especially adapted to camp use. Manufacturers have developed products that are lightweight and can be nested together into a compact package.

Aluminum cookware heats quickly and is lighter than steel or cast iron cookware, but does not hold heat as well. Cast iron and steel are very durable, but are heavy and will rust if not properly seasoned.

Weight

Wide variety of weights

Sources

Beckel Canvas Products
Buckskin Outfitters
CW Classic Welding
Cabela's
Century Tool and Manufacturing
Coleman Outdoor Products, Inc.
Colorado Saddlery Company
Don Gleason's Campers Supply, Inc.
Nelson/Weather-Rite
Old West Outfitters
Recreational Equipment, Inc.
Salem Tent and Awning Company
Sims Stoves
Soda Creek Western Outfitters
Trail Rider Supply, Inc.
Walker's Pack Saddlery and Outdoor Supply
The Wilderness Trader
Local sporting goods and variety stores

Cost

Wide range of cost, depending on the item

Freeze-Dried or Dehydrated Food

Description

Lightweight freeze-dried and dehydrated foods are available in main dishes and side dishes. Many are sold at local sporting goods and grocery stores.

Freeze-dried and dehydrated foods are lighter and less bulky than fresh or canned foods. There is no danger of spoilage, and no refrigeration is needed. Most foods are precooked and require only a few minutes to reconstitute.

Weight

2 pounds (0.91 kilogram) per person per day

Sources

Campmor
Don Gleason's Campers Supply, Inc.
Recreational Equipment, Inc.
Local sporting goods stores
Grocery stores

Cost

$.25 to $30 per package

Reusable Plastic Food Containers

Description

Reusable plastic food containers include plastic jars with snap or screw-on tops and heavy-duty zipper-lock bags.

Transferring foods from glass jars or cans to reusable plastic containers eliminates breakage, weight, and potential litter. When needed, be sure to keep foods refrigerated after opening.

Weight

1 ounce to 3 ounces (0.03 kilogram to 0.08 kilogram) per container

Sources

Campmor
Don Gleason's Campers Supply, Inc.
Nelson/Weather-Rite
Recreational Equipment, Inc.
Local sporting goods stores

Cost

$.75 to $15 per container

Equipment Sources

Aarons Water Packers
Rt 1 Box 210
Halfway OR 97834
(503) 742-4164

American Canvas Company
Denver Tent Company
4004 Grape St
Denver CO 80216
(303) 399-3232

Back Country Super Packs
PO Box 565
Baraboo WI 53913
(608) 356-9491

Beckel Canvas Products
2232 SE Clinton
Portland OR 97202
1-800-237-3362

Big Sky Tent and Awning
PO Box 3596
3759 N Reserve
Missoula MT 59806
(406) 543-8303

Blue Star Canvas Products
300 W Main
Missoula MT 59802
(406) 728-1738

Buckskin Outfitters
Rt 1 Box 24
Desmet ID 83824
(208) 268-2323

Burns-Milwaukee, Inc
4010 W Douglas Ave
Milwaukee WI 53209
(414) 438-1234

C & S Welding
1400 N Main #22
Cedar City UT 84720
(801) 586-3829

CW Classic Welding
181 S 100 W
Mona UT 84645
(208) 257-3589

Cabela's
812 13th Ave
Sidney NE 69160
1-800-237-4444

Cambridge Welding
PO Box 272
Cambridge ID 83610
(208) 257-3589

Campmor
PO Box 997-Q
810 Rt 17 N
Paramus NJ 07653-0997
1-800-526-4784

Canyon Sheet Metal, Inc
6730 Springhill Rd
Belgrade MT 59714
(406) 586-9601

Central Oregon Appaloosa Assoc
19030 Pinehurst Rd
Bend OR 97701
(503) 389-8738

Century Tool and Manufacturing
PO Box 188
1462 U S Rt 20 Bypass
Cherry Valley IL 61016
1-800-435-4525
Fax (815) 332-209

Coleman Outdoor Products, Inc
250 N St Francis
Wichita KS 67202
1-800-835-3278

Colorado Saddlery Company
1631 15th St
Denver CO 80202
(303) 572-8350
Fax (303) 825-0643

Colorado Tent Company
2228 Blake St
Denver CO 80205-2097
1-800-534-8368
(303) 294-0924
Fax (303) 294-0949

Crazy Creek Products
PO Box 1050
Red Lodge MT 59068
1-800-331-0304

Crooked Pine Saddle Shop
662 Dry Gulch Rd
Stevensville MT 59870
(406) 777-3108

Dale Pack Station
321 Wiseacre Rd
Yakima WA 98901
(509) 452-9455

Bill DeCarteret
30547 Mehrten Dr
Exeter CA 93221
(209) 592-2878

Diamond Brand USA
Highway 25
Naples NC 28760
(704) 684-9848

Euer Hereford Ranch Supplies
PO Box 400
Folsom CA 95763
(916) 933-5206

Eureka! Tent
PO Box 966
Binghamton NY 13902
(607) 779-2200
1-800-572-8822

Don Gleason's Campers Supply, Inc
PO Box 87
9 Pearl St
Northampton MA 01060-0087
(413) 584-4895

Glenn Sports
PO Box 88
Wellington CO 80549
1-800-553-5136

Ray Holes Saddle Company
213 W Main
Grangeville ID 83530
(208) 983-1460

Howell New Zealand Fencing System
Box 61
Malad City ID 83252
(208) 766-2580
(208) 766-2353

Jack's Plastic Welding
115 S Main
Aztec NM 87410
(505) 334-8748

Keyston Brothers
1848 Deming Way
Sparks NV 89431
(702) 359-8884
Fax 702-359-8997

Kozy Kamp
18002 Tupper Rd
Sandy OR 97055
(503) 668-8973

Kwik Kamp
Rt 2 Box 185-X
Milton-Freewater OR 97862
Day (503) 558-3966
Eve (503) 558-3960

Last Chance Outdoor Supply
517 Waukesha
Helena MT 59601
(406) 442-3199

Live Wire Products
1127 E St
Marysville CA 95901
(916) 743-9045
Fax (916) 743-0609

Merritt's Saddlery
PO Box 1516
South Charles St
Salmon ID 83467
(208) 756-4170

Montana Canvas
PO Box 390
Belgrade MT 59714
(406) 388-1225

Gene "Grizzly" Morgan
2901 S Skagit Highway
Sedro Wooley WA 98284
(206) 826-4375

Morgan Horse Products
1st and Main
Ellsworth NE 69340
(308) 762-4884
Fax (308) 762-8650

Moss, Inc
PO Box 309
Mount Battie St
Camden ME 04843
1-800-341-1557

Mountain River Tack, Inc
508 Main St
Salmon ID 83467
(208) 756-2212

Nayr Industries
2250 E Bijou
Colorado Springs CO 80909
(719) 471-9572

Nelson/Weather-Rite
6000 Peachtree St
Commerce CA 90040-4012
1-800-533-5355

The North Face
999 Harrison St
Berkeley CA 94709
(415) 527-9700

Northwest River Supplies
PO Box 9186
Moscow ID 83843-9186
1-800-635-5202

Old West Outfitters
7213 E 1st Ave
Scottsdale AZ 85251
1-800-447-5277

Outfitters Pack Station
1462 W Broadway
Idaho Falls ID 83402
1-800-657-2644

Outfitters Supply
7373 Highway 2 E
Columbia Falls MT 59912
(406) 892-3650

Partner Steel Company, Inc
PO Box 2700
Pocatello ID 83206
(208) 233-2371
Fax (208) 233-2536

Petty Mountain Outfitter Supply
33615 Ed's Creek Rd
Alberton MT 59820
(406) 864-2162

Pyromid
3292 S Highway 97
Redmond OR 97756
1-800-824-4288

Ralide Corporation, Inc
PO Box 131
Athens TN 37303
(615) 745-6213

Recreational Equipment, Inc
1700 45th St E
Sumner WA 98390-0900
1-800-258-4567

Riley Stove Company
PO Box 817
Townsend MT 59644
(406) 266-5525

Robertson Enterprises
PO Box 1711
Cody WY 82414
(307) 587-3358

Salem Tent and Awning Company
280 Wallace Rd NW
Salem OR 97304
(503) 363-4788

Sierra Designs
2039 4th St
Berkeley CA 94710
1-800-423-6363

Sims Stoves
PO Box 21405
312-1/2 Prickett Ln
Billings MT 59104
(406) 259-5644

Singletree Saddle Shop
PO Box 120
Seeley Lake MT 59868
(406) 677-2189

Slumberjack, Inc
PO Box 7048-A
1224 Fern Ridge Parkway
St Louis MO 63177
1-800-233-6283
Fax (314) 576-8072

Soda Creek Western Outfitters
PO Box 4343
355 Lincoln
Steamboat Springs CO 80477
1-800-824-8426

Speedrite
PO Box 1910
Palmerston North New Zealand

Spokane Tent and Awning Company
E 410 Trent
Spokane WA 99202
1-800-228-8277

Stephenson
Rt 4
Gilford NH 03246
(603) 293-8526

E.H. Teasley and Company, Inc
PO Box 515
Dallas TX 75221
(214) 421-7633

Therm-A-Rest
Cascade Designs, Inc
4000 1st Ave S
Seattle WA 98134
1-800-527-1527

Thunder Mountain Tent and Canvas
107 McClure Ave
Nampa ID 83651
(208) 467-3109

Chris Tornow
PO Box 984
Monroe WA 98272
(206) 794-5959

Trail Rider Supply, Inc
Rt 1 Box 928 A
Beaverton OR 97007
1-800-326-2292

Valley Vet Supply
PO Box 504
East Highway 36
Marysville KS 66508-0504

Walker's Pack Saddlery and Outdoor Supply
68633 Allen Canyon Loop
Wallowa OR 97885
1-800-253-5841

Walrus, Inc
929 Camelia St
Berkeley CA 94710
(510) 526-8961

Wendy and Cindy Originals, Inc
4010 W Douglas Ave
Milwaukee WI 53209
(414) 438-1000

Whip and Spur Saddlery
E 3527 Sprague #7
Spokane WA 99036
(509) 535-4289

The Wilderness Trader
PO Box 3453
463 Turner Dr, Ste 101A
Durango CO 81301
(303) 259-2269

J L Williams Company
2040 E Fairview, Ste 3-A
Meridian ID 83642
1-800-843-3702
Fax (208) 888-9108

Windridge Farms
24691 Highway 20 E
Nevada City CA 95959-9124
(916) 265-3276

Wyoming Outdoor Industries, Inc
1231 13th St
Cody WY 82414
(307) 527-6449
Fax (307) 527-7508

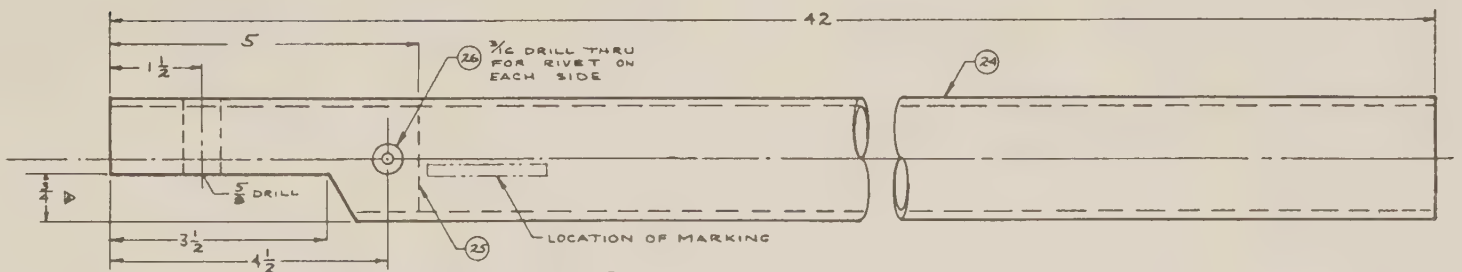
Ridgepole and Case Specifications

Detail drawings available from MTDC.

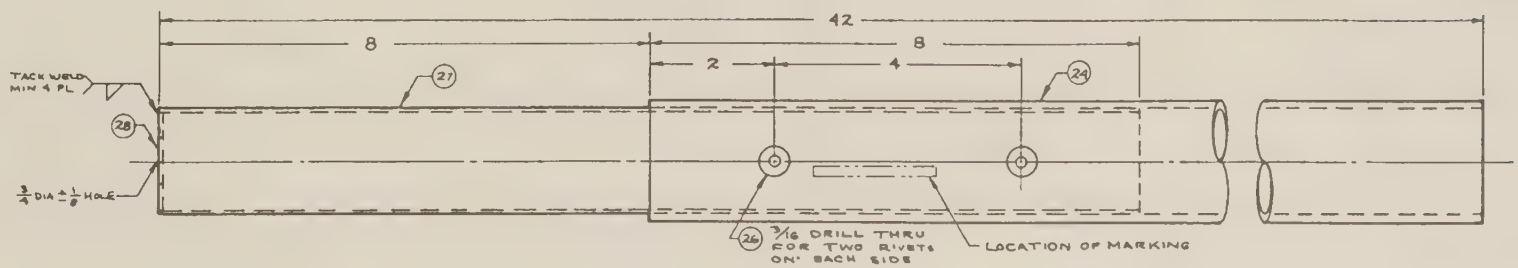
RIDGE POLE, SECTIONAL MODEL 1982

MATERIALS LIST

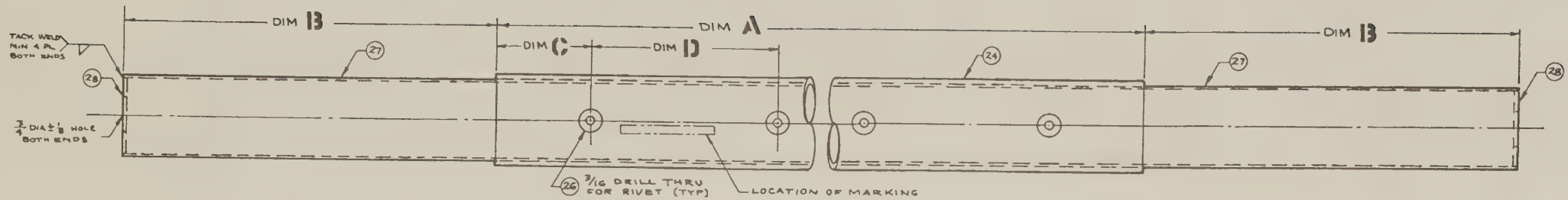
NO	PART NAME	REQD	MATERIAL-DESCRIPTION	SHEET
MEDC-694-1	RIDGE POLE 12'	1	2 PARTS 21, 1 PART 22, 1 PART 23 (12')	
MEDC-694-2	RIDGE POLE 16'	1	2 PARTS 21, 3 PARTS 22, 1 PART 23 (16')	
MEDC-694-3				
MEDC-694-4				
MEDC-694-5				
MEDC-694-6				
MEDC-694-7				
MEDC-694-8				
MEDC-694-9				
MEDC-694-10				
MEDC-694-11				
MEDC-694-12				
MEDC-694-13				
MEDC-694-14				
MEDC-694-15				
MEDC-694-16				
MEDC-694-17				
MEDC-694-18				
MEDC-694-19				
MEDC-694-20				
21	END SECTION	2	PARTS 24, 25 & 26	
22	MID SECTION	AS REQ'D	PARTS 24, 26, 27 & 28	
23	CONNECTOR	1	PARTS 24, 26, 27 & 28	
24	TUBE	AS REQ'D	2 OD X .125 WALL 6061-T6 ALUM TUBE	
25	PLUG	2	1 3/4 OD MED OR HIGH DENSITY POLYETHYLENE ROD	
26	RIVET	AS REQ'D	STAR PIN-GRIP, ALUM, 3/16 DIA X 3/16 GRIP STAR	
			#2210-06500 OR STAR NYLON ANCHOR 3/16 X	
			3/4 LG STAR #2410-245	
27	INNER TUBE	AS REQ'S	1 1/16 OD X .065 WALL MECH STEEL TUBE	
28	END	AS REQ'D	1/16 MIN 1/8 MAX THICK STEEL DISK	



21 END SECTION



22 MID SECTION



(23) CONNECTOR

TENT POLE LENGTH	DIM A	DIM B	DIM C	DIM D	NO. OF RIVETS	INNER TUBE NO REQD	INNER TUBE LENGTH	NOTES
12 FT	26	8	2	4	8	2	16	4 RIVETS EACH SIDE
16 FT	6	8	2	2	4	1	22	2 RIVETS EACH SIDE

NOTES:

1 MARKING - PERMANENTLY MARK EACH POLE SECTION AS FOLLOWS: END SECTION ~ MEDC-694-21, MID SECTION ~ MEDC-694-22, CONNECTOR ~ MEDC-694-23 (TOTAL LENGTH OF POLE) (EXAMPLE 12FT, 16 FT ETC.) IN 1/8-INCH MIN - 3/16-INCH MAX. LETTERS LOCATED AS SHOWN ON DRAWING. PAINTING IS NOT CONSIDERED PERMANENT MARKING.

2 FINISHING - THE OUTTER SURFACES OF THE STEEL TUBING AND END CAP SHALL BE COATED WITH A PRIMER CONFORMING TO COMPOSITION G OR L, AS APPLICABLE, OF TT-P-636. AFTER THE PRIMER HAS BEEN ALLOWED TO DRY, ALL PRIMED SURFACES SHALL BE COMPLETLY COATED WITH A BLACK ENAMEL CONFORMING TO CLASS A OR B, COMPOSITION G OR L, AS APPLICABLE, OF TT-E-529. THE COATING SHALL BE SMOOTH, UNIFORM, DRY FILM WITHOUT RUNS, WRINKLES, BLISTERS, AREAS OF THIN OR NO FILM, SCRATCHES, FOREIGN MATTER EMBEDDED IN FINISH, AND WET OR TACKY PAINT. OPTIONAL TO USE CORVELL ECA-1655-FC3 EPOXY COATING INPLACE OF PRIMER AND ENAMEL. COLOR BLACK. ▷

3 ALUMINUM SURFACES SHALL BE TREATED IN ACCORDANCE WITH MIL-C-5541.

	6-5-86	ADD DIM TO CUT, END SECT AND EPOXY PAINT NOTE 2	DAL
UNLESS OTHERWISE SPECIFIED	DATE	REVISION	BY
TOLERANCES: FRACTIONS ± 1/16, DECIMALS ± .005, ANGLES ± ~	U.S. DEPT. OF AGRICULTURE FOREST SERVICE EQUIPMENT DEVELOPMENT CENTER MISSOULA MONTANA		
DIMENSIONS ARE IN INCHES. BREAK SHARP EDGES			
DRAWN LASSILA	TITLE		
DESIGNED LASSILA	RIDGE POLE, SECTIONAL MODEL 1982		
CHECKED RGG			
APPROVED RGG			
SCALE			
DATE FEB 1982	SHEET 1 OF 1	MEDC-694 ▷A	

MATERIALS LIST FOR RIDGE POLE CARRYING CASE

NO	PART NAME	REQD	MATERIAL DESCRIPTION	SHEET
1	MAIN PANEL	2	CLOTH, DUCK, COTTON, NO 6 TYPE I OF	
2	BOTTOM	4	CCC-C-419, COLOR AND TREATMENT	
			SHALL BE TYPE I, CLASS B OF CCC-D-	
			950, OD NO 7	
3	WEBBING	AS REQD	COTTON, 1-INCH WIDTH, TYPE IIb. CLASS	
			4 OF MIL-W-530, OD NO 7	
4	THREAD	AS REQD	POLYESTER, TYPE I, CLASS I, SHADE S-1	
			OF V-T-285, SIZE FF	
5	BUCKLE	4	TONGUE LESS, 2-BAR, TYPE II, STYLE 1,	
			CLASS 1, SIZE 1-INCH OF MIL-B-543	
6	END CLIP	4	BALL END CLIP, TYPE I, CLASS 1, SIZE	
			1-INCH OF MIL-C-496	

NOTES:

1. STITCHING - ALL STITCHING SHALL BE TYPE 301 OF FED STD NO 751, 6 TO 8 STITCHES PER INCH.

2. THREAD BREAKS - SHALL BE OVERSTITCHED NOT LESS THAN 1-INCH AT EACH BREAK.

3. STITCHING ENDS - ENDS OF ALL STITCHING SHALL BE OVERSTITCHED OR TURNED UNDER IN A HEM OR HELD BY OTHER STITCHING

4. SETTING OF END CLIP - WEBBING SHALL BE INSERTED THE FULL DEPTH OF THE CLIP. CLIPS SHALL BE SECURELY SET WITHOUT CUTTING THE WEBBING AND THE WEBBING SHALL LIE FLAT AT THE CLIP.

5. WORKMANSHIP - CLOTH SHALL BE FREE OF HOLES, CUTS AND TEARS. WEBBINGS SHALL NOT HAVE SCALLOPED EDGES. THREAD TENSION SHALL BE MAINTAINED SO THERE WILL BE NO LOOSE STITCHING. TAKE CARE NOT TO INCUR NEEDLE CHEWS IN SEWING. TRIM ALL THREAD ENDS TO ½ INCH OR LESS. METAL COMPONENTS SHALL BE FREE OF BURRS, SHARP EDGES AND SHALL NOT BE BROKEN OR MALFORMED.

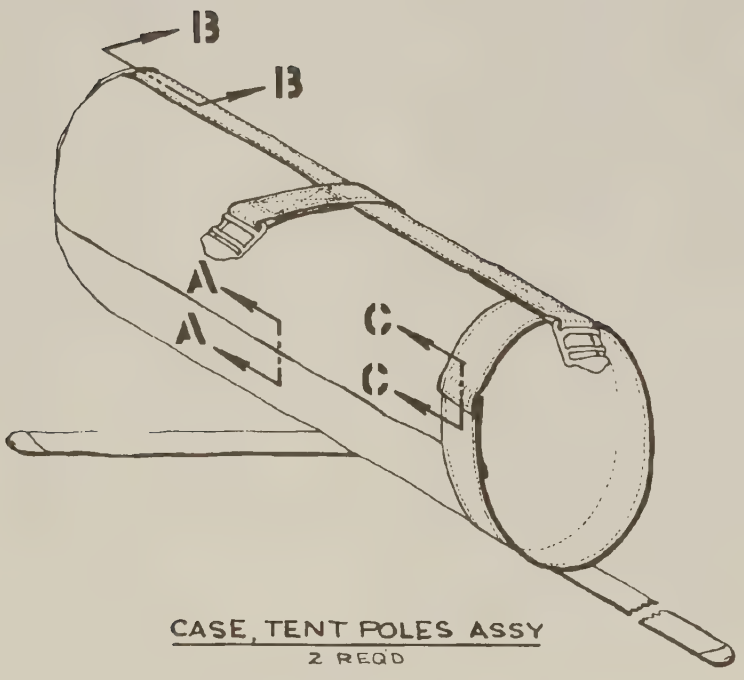
6. MARKING - IDENTIFICATION MARKING SHALL BE APPLIED AS SHOWN WITH A BLACK PAINT OR INK WHICH IS WATER RESISTANT.

UNLESS OTHERWISE SPECIFIED
TOLERANCES SHALL BE AS FOLLOWS:

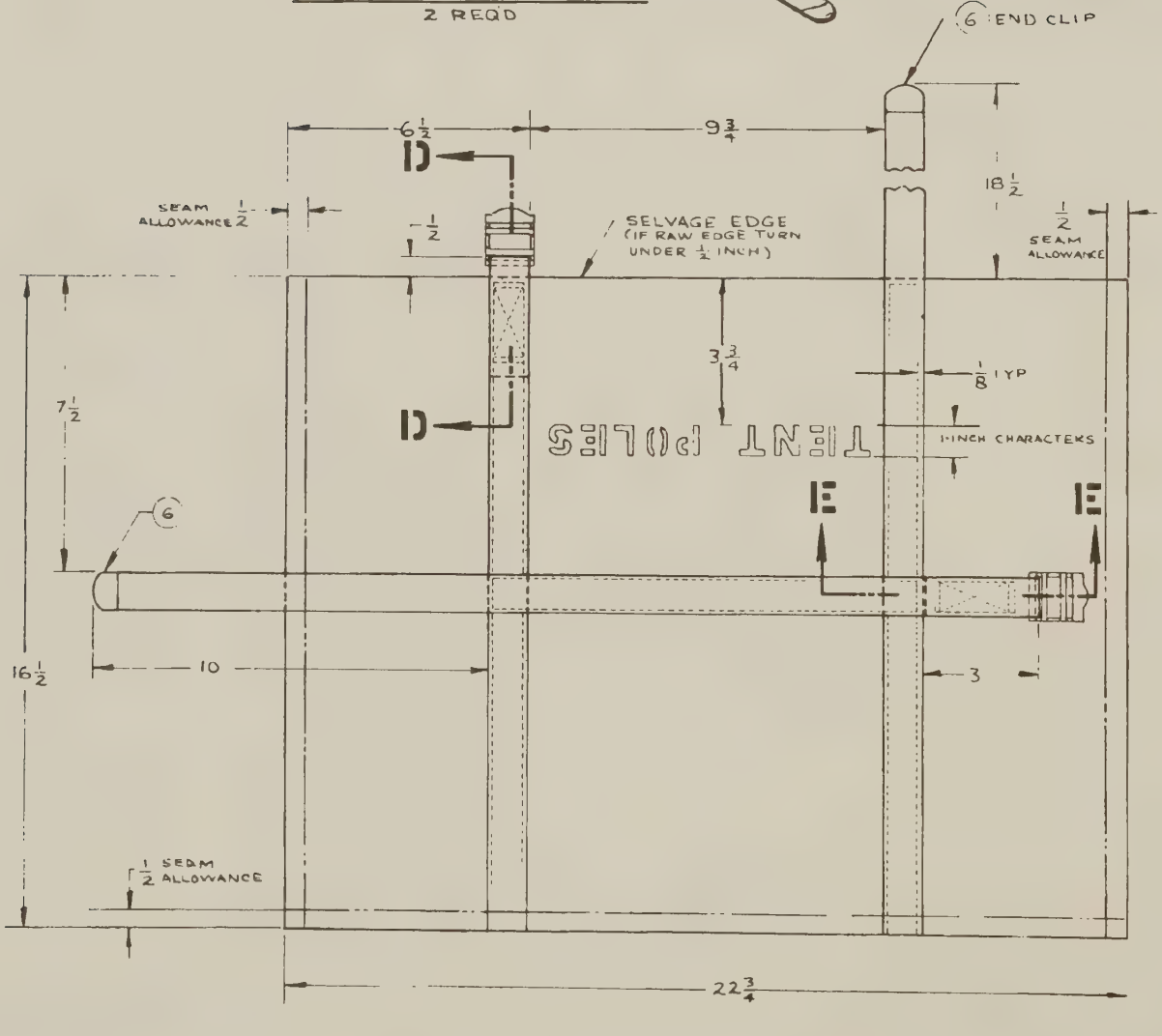
LESS THAN 2 INCHES	± 1/16
2 TO 10 INCHES	± 1/8
OVER 10 INCHES	± 1/4

CASE, TENT POLES

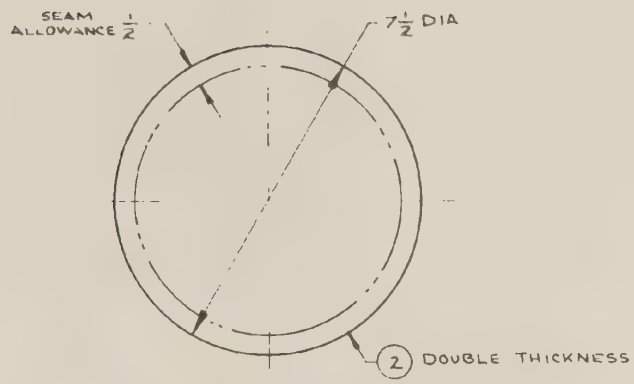
MEDC – 463



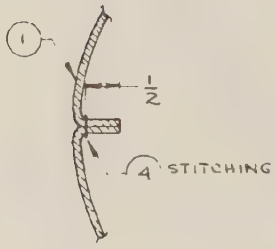
CASE, TENT POLES ASSY
2 REQD



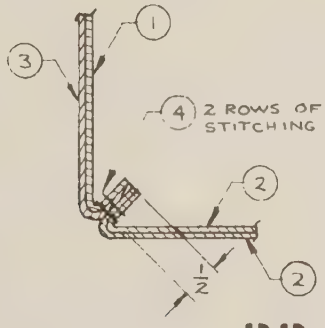
MAIN PANEL ASSY



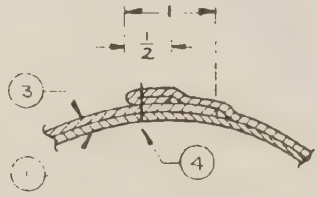
BOTTOM
2 REQ'D



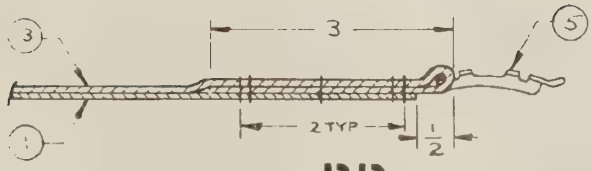
SECTION AA



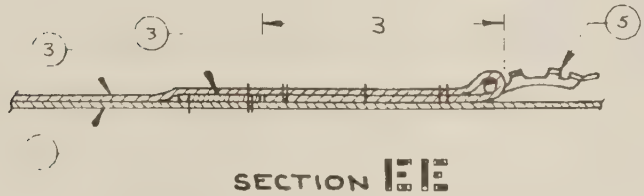
SECTION BB



SECTION CC



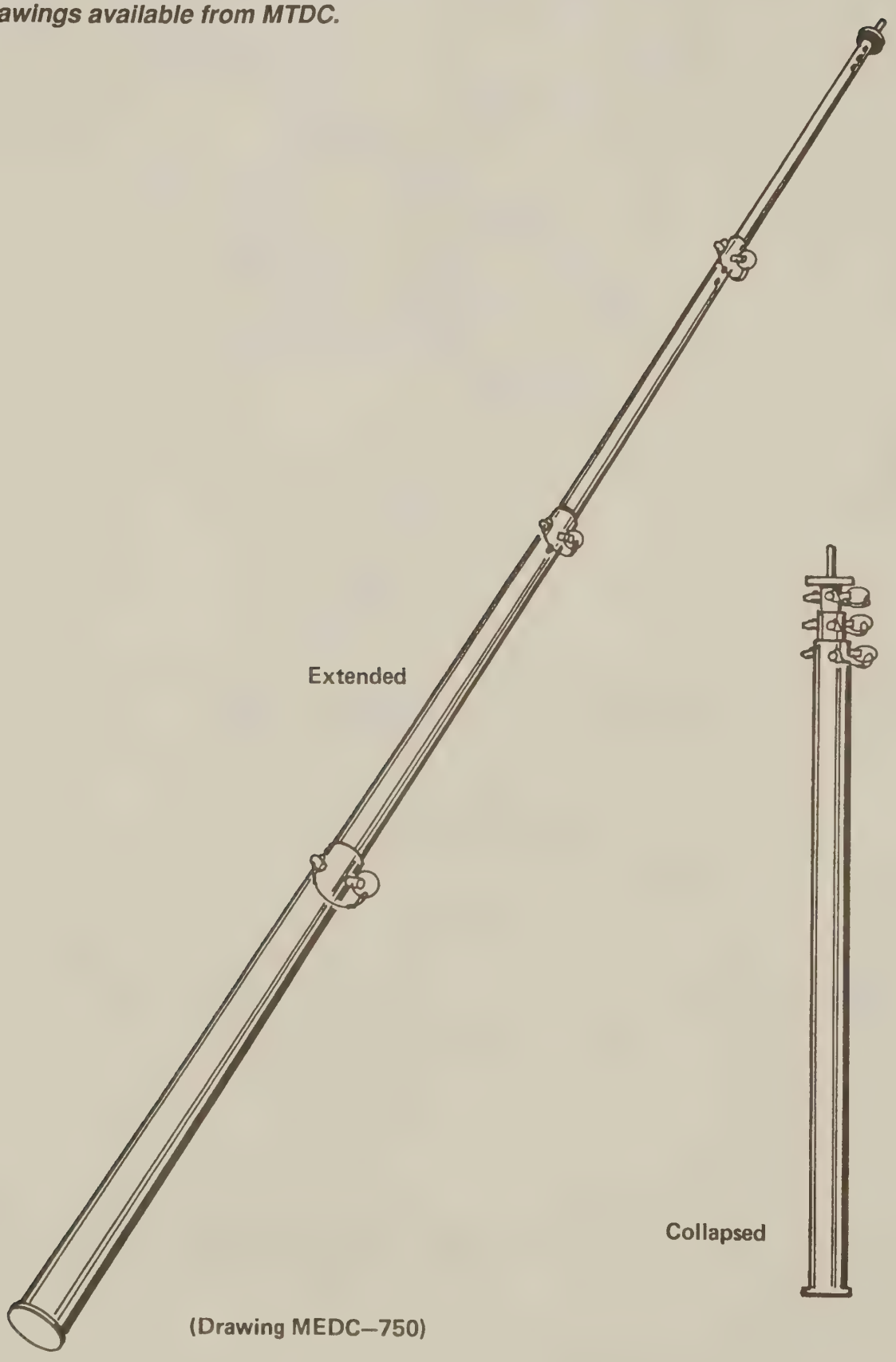
SECTION DD



SECTION EE

Heavy Duty Upright Tent Pole (Collapsible) Drawing

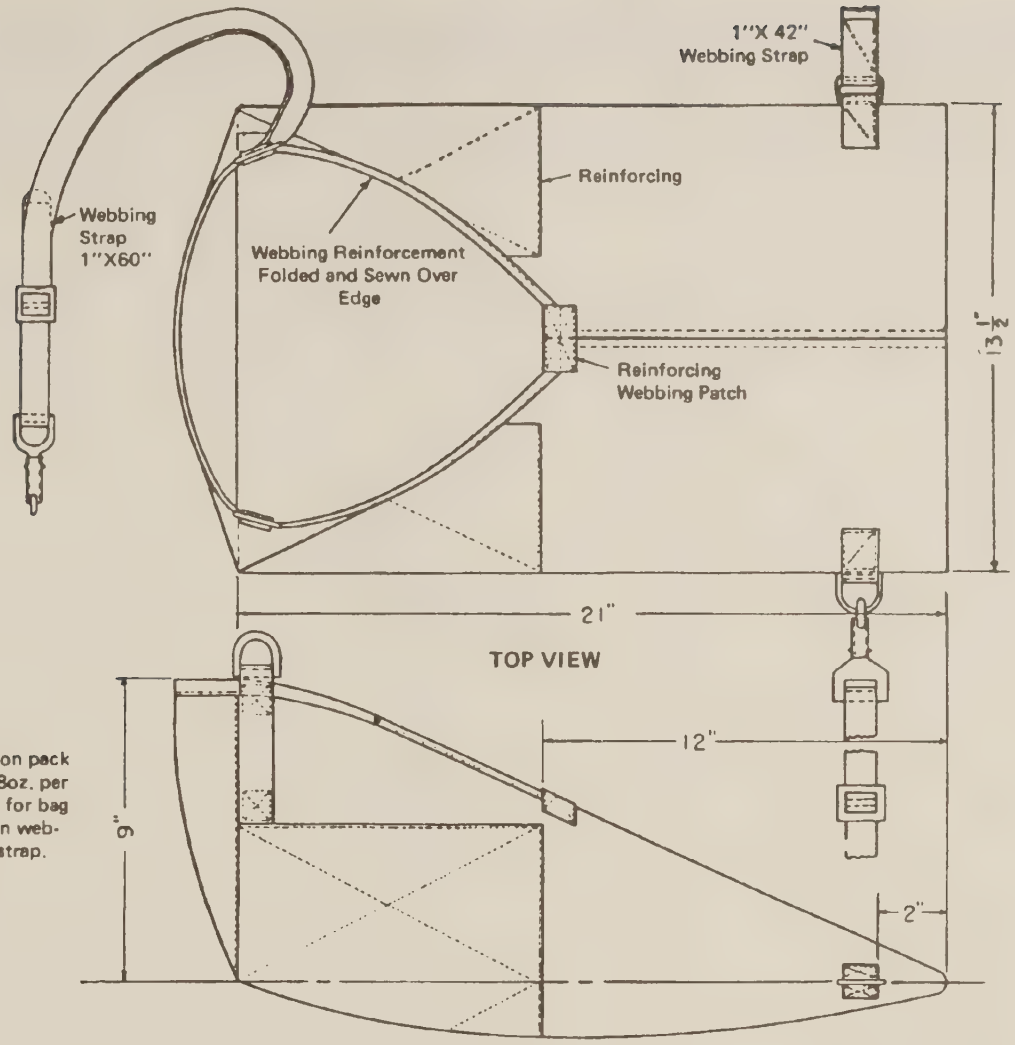
Detail drawings available from MTDC.



(Drawing MEDC–750)

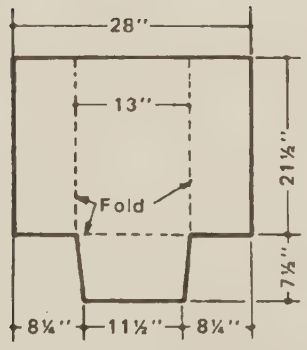
Nose Bag Specifications

Detail drawings available from MTDC.

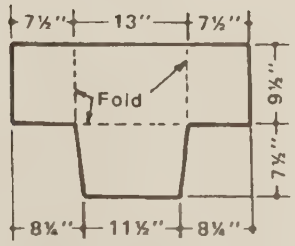


Note:
Use nylon pack cloth(7-8oz. per sq. yard) for bag and nylon webbing for strap.

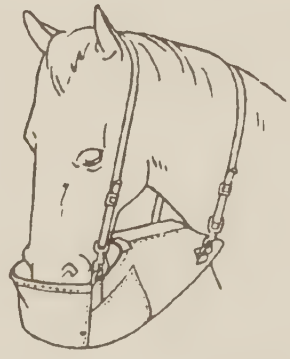
SIDE VIEW



MAIN PATTERN



REINFORCING PATTERN

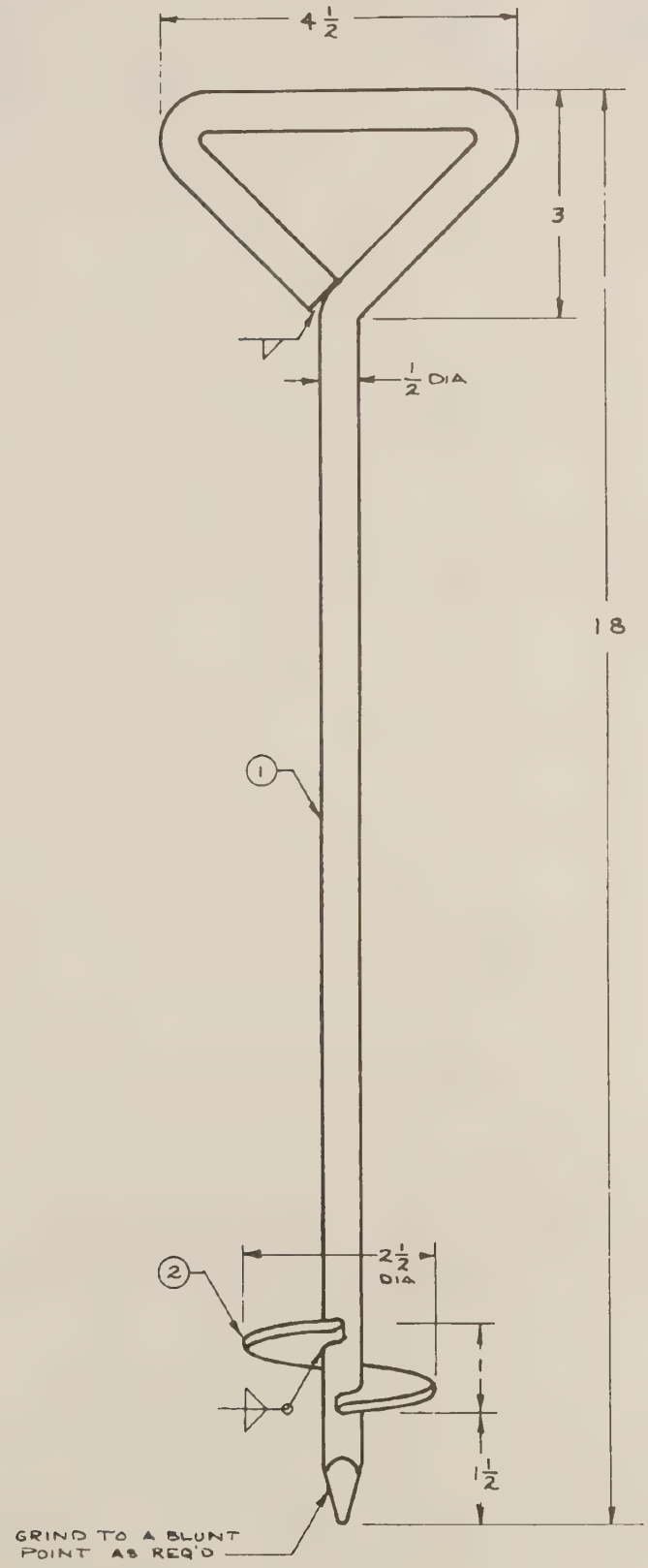


NOSE FEED BAG

Picket-Pin Specifications

Detail drawings available from MTDC.

MATERIALS LIST				
NO	PART NAME	REQD	MATERIAL DESCRIPTION	SHEET
1	ROD	1	1/2 DIA 1020 STEEL ROD	
2	AUGER	1	1/8 THICK X 2 1/2 1008 HR STRIP OR 1/2 ID X 2 1/2 FENDER WASHER	



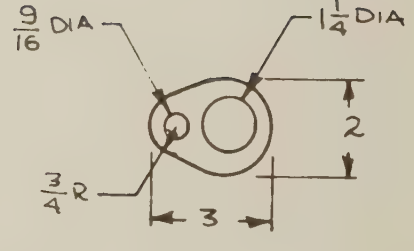
PICKET-PIN, HORSE

MEDC – 669

TURN STAKE INTO GROUND
BY HAND OR WITH A STICK
THRU HANDLE.

SWIVEL SNAP

PEAR LINK

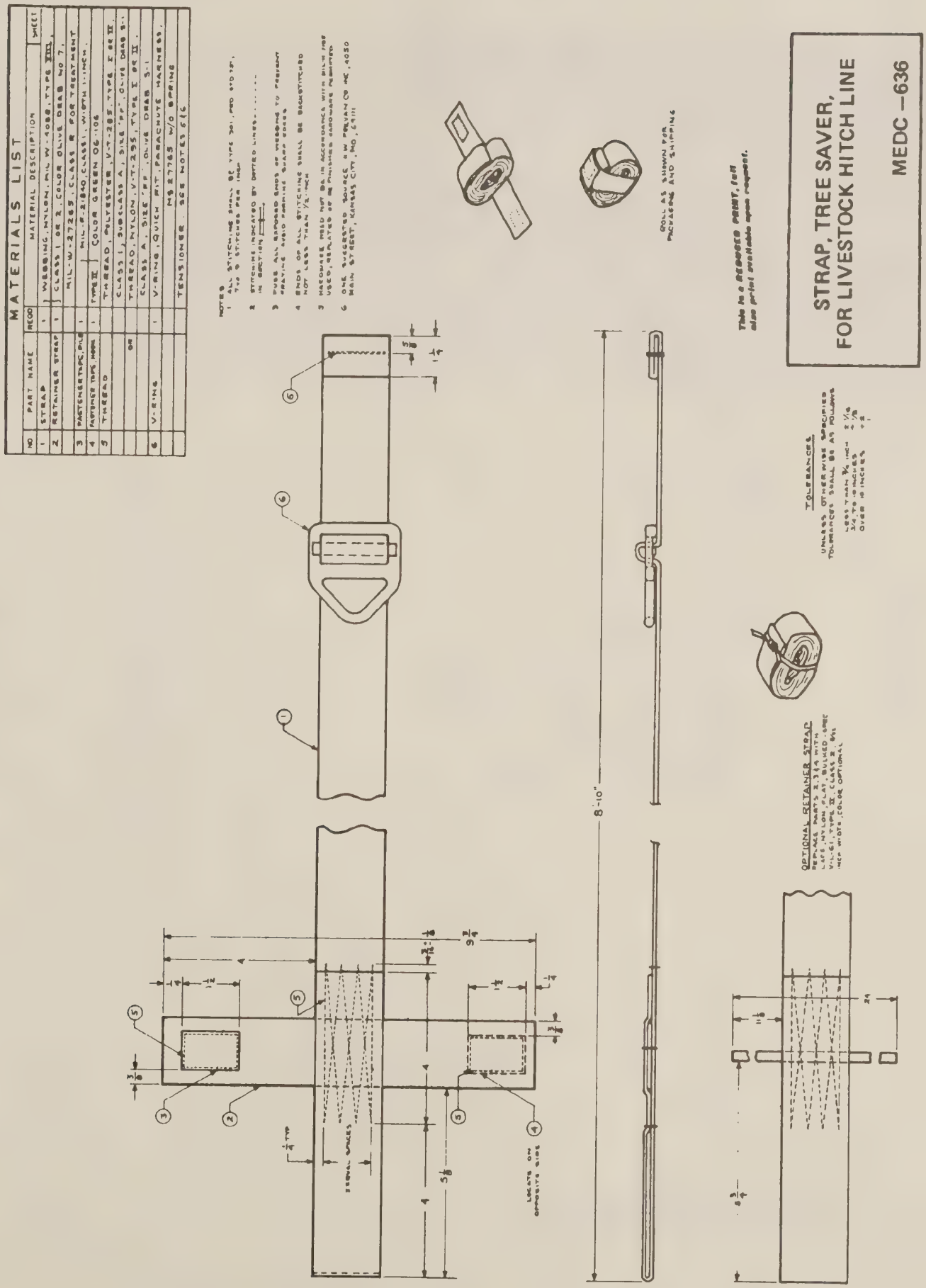


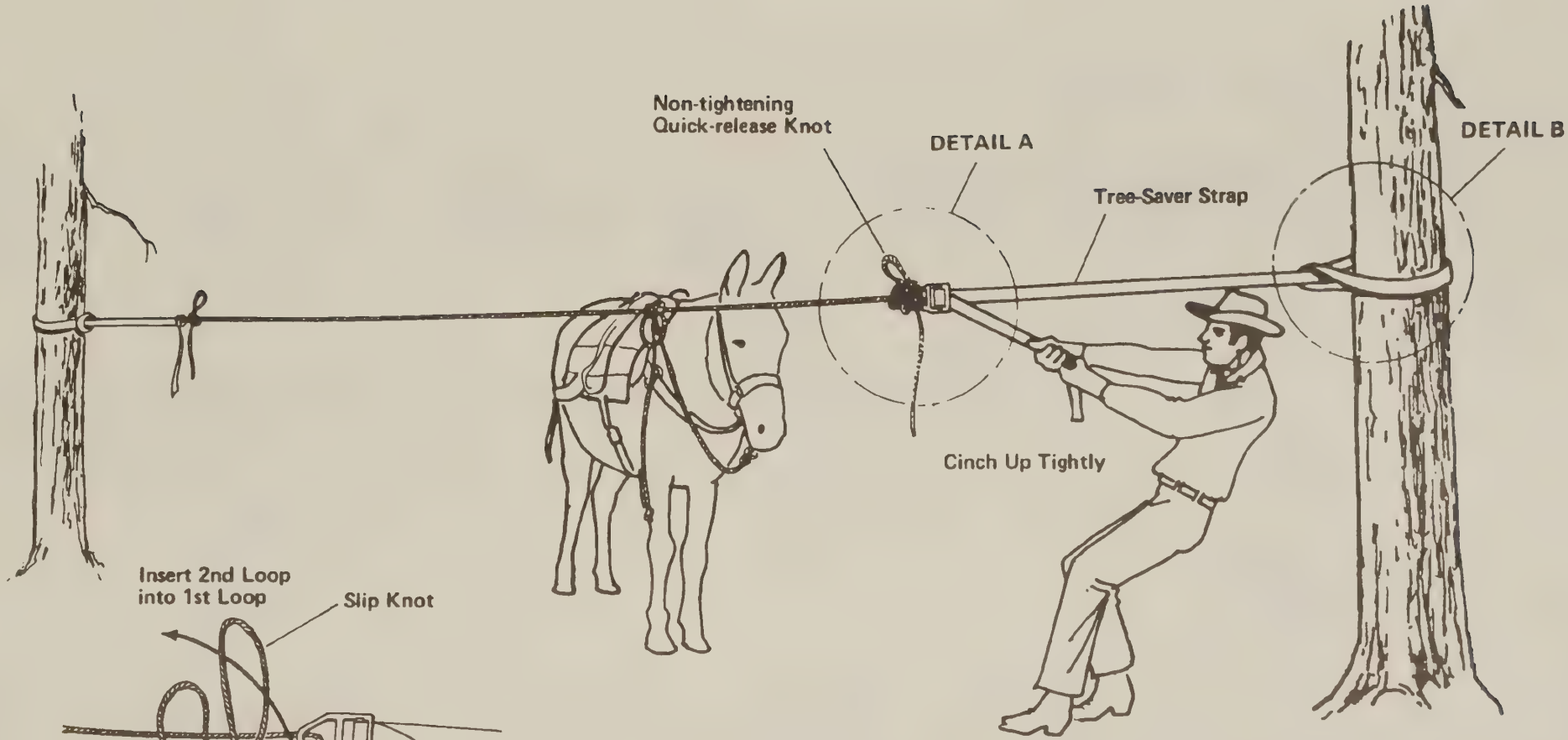
LINK

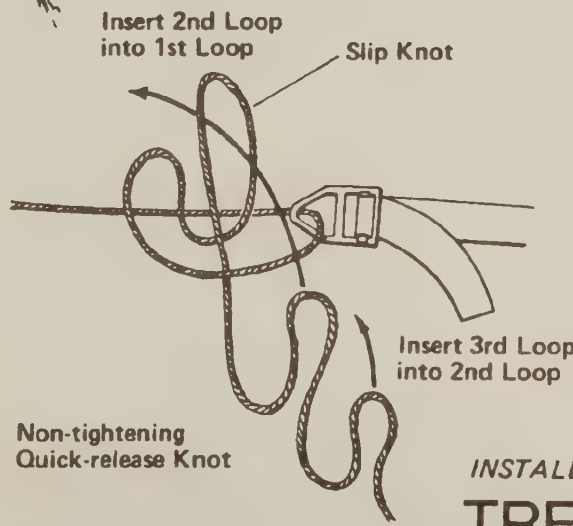
USE ONE OF THE ABOVE METHODS TO PICKET STOCK TO STAKE. PEAR LINK CAN BE TURNED ON TO STAKE BEFORE INSERTING IN GROUND. LINK TYPE MUST BE ASSEMBLED ON ROD BEFORE AUGER IS ATTACHED.

Tree-Saver Strap Specifications

Detail drawings available from MTDC.







DETAIL A

INSTALLATION INSTRUCTIONS FOR

TREE-SAVER STRAP

WITH HITCH LINE

DETAIL B

Appendixes

A-Wilderness Stock Trip Checklist

Before the trip:

_____Stock is used to being packed and walking on a trail
_____Stock are familiar with restraints
_____Stock are:
    _____shod
    _____wormed
    _____vaccinated
_____Check condition of packsaddles, manties, panniers, top packs and covers
_____Check weather conditions
_____Tell someone where you plan to go
_____Gather information about the area:
    _____your route (maps of area)
    _____the terrain (condition of the trail, possible trail closures)
    _____altitude (elevation)
    _____mileage to be traveled
    _____available forage
    _____bear country? need for bear-resistant boxes
_____Necessary permits:
    _____campsite permits
    _____campfire permits
    _____stock grazing permits

Stock Equipment check list:

_____Stock first aid kit
_____Supplemental (weed-seed-free) feed
_____Restraints:
    hobbles, pickets, electric or plastic fencing
_____Nose bags and mangers
_____Tree-saver straps
_____Mantie and sling ropes
_____Bug repellant and face nets
_____Salt block
_____Collapsible buckets
_____Scales for weighing loads
_____Temporary horseshoes
_____Hoof tools

Camp Gear

_____Sleeping bags
_____Sleeping pads/mattresses
_____Tent
_____Shelter supports
_____Ground cloth
_____Stove (cooking)
_____Heater (catalytic or space)
_____Lanterns
_____Fuel
_____Flashlight
_____Cookware and utensils
_____Bear-resistant boxes
_____Freeze-dried/dehydrated and repackaged foods
_____Water filtering system
_____Reusable plastic containers
_____Portable toilet
_____First-aid kit
_____Firepan

Tools

_____Shovel
_____Saw
_____Axe

On the Trail Checklist

_____Campfire completely drowned out
_____Fire ring dismantled
_____Manure piles scattered
_____All debris picked up and packed out
_____Any objects removed from the campsite are returned
_____Natural litter scattered over campsite

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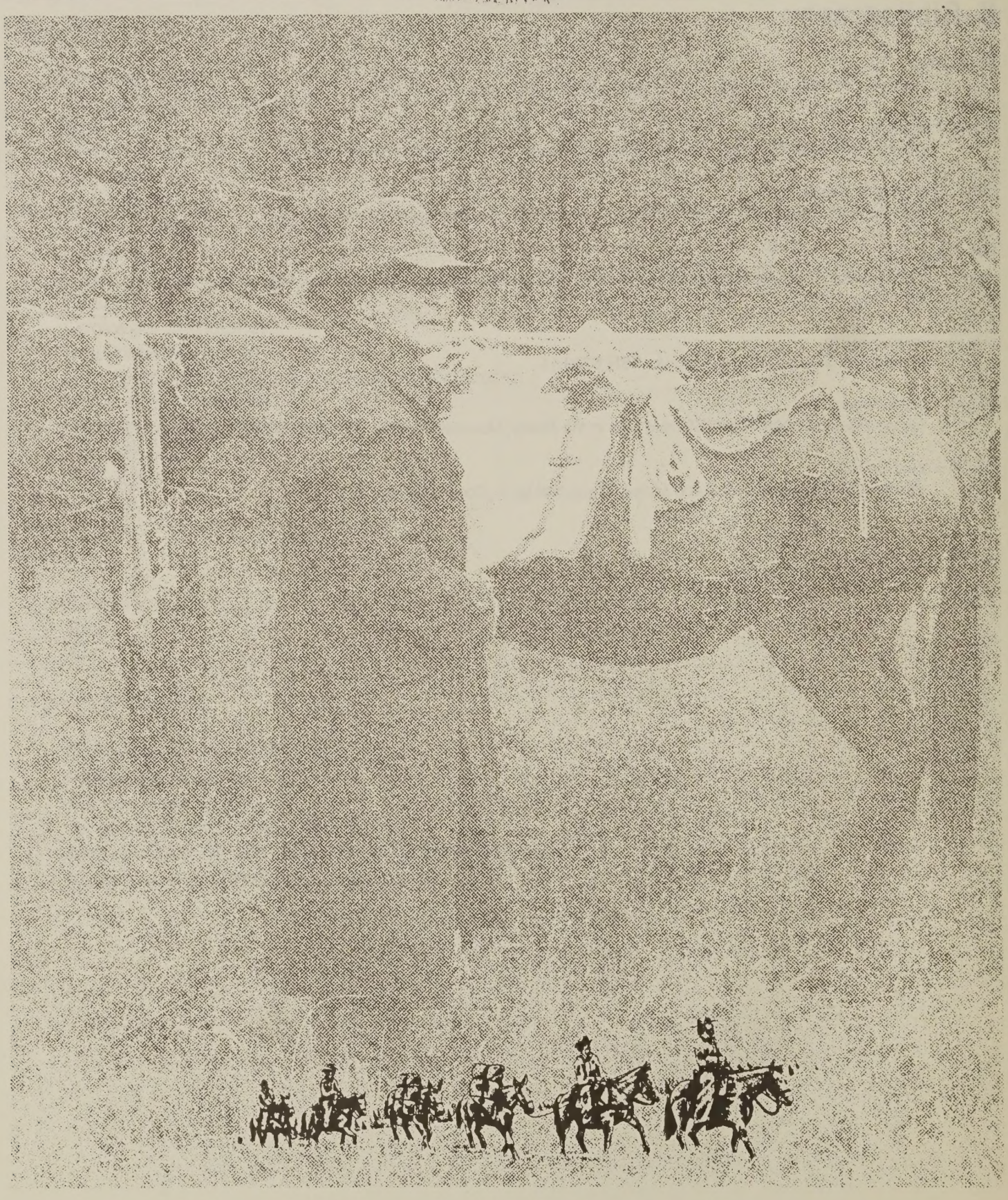

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